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How are researchers supported post Finch Report?

The University of Bristol and Open Access: How are researchers supported post Finch Report?

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Abstract

This research investigates how a research-intensive university supports researchers in their endeavour to communicate research findings through Open Access (OA) articles in scholarly publications post Finch Report (2012). It examines the culture of scholarly communications, the change in expectations regarding the availability of information in a technologically driven age, and the resulting paradigm shift regarding scholarly publications. This is set contextually against the culture and status of the University, and the Finch Report, whose impact affects how the University markets, manages, enables and assists publication in and access to research for Research Councils UK (RCUK) funded researchers. Current research in this area (Research Information Network, 2013) finds the lead responsibility for administering Article Processing Charge (APC) payments almost exclusively rests with libraries, reflecting past experience dealing with publishers, journal costs and sometimes, existing policies for Wellcome Trust block grants. However, this inserts the library into a private author/publisher relationship, presenting challenges for all parties. This research will examine communications with researchers, the library's pre-existing infrastructure, and current procedures and policies for dealing with OA claims, comparing these against recommendations provided after the first year of RCUK's OA policy. This will allow for measurement of existing arrangements efficacy in relation to academic cultural practices, establish Bristol's success in its endeavour, and identify areas requiring additional provisions; the purpose is to maximise potential for supporting the University's community of researchers equitably across the Schools, whilst considering the probability of successfully realising this with externally governed limitations, financial constraints and embedded cultural practices. There are benefits for the wider higher education community, as the research illustrates practices and problems encountered when administering large budgets and considerable research outputs post Finch report.

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This work is dedicated to Open Access and Research Data teams everywhere. It’s a brave new world.

Author's Declaration:

I declare that the work in this dissertation was carried out in accordance with the Regulations of the University of the West of England, Bristol. The work is original except where indicated by special reference in the text and no part of the dissertation has been submitted for any other degree.

Any views expressed in the dissertation are those of the author, and in no way represent those of the University.

The dissertation has not been presented to any other University for examination either in the United Kingdom or overseas.

Signed: …… Date: ……..

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List of abbreviations and terms used

Accepted article/Accepted Manuscript: A version of a paper that is post- peer review, but prior to typesetting, formatting and stylistic amendments.

Acknowledgement: An acknowledgement in the article of specific funder's and grants.

AHRC: Arts and Humanities Research Council.

Altmetrics: Alternative metric measurements.

Article: A research paper, published in a journal.

APC: Article Processing Charge.

Author Pays: Also known as Gold OA.

BBB: The collective term for the Budapest Open Access Initiative (2002), the Bethesda Statement on Open Access Publishing (2003) and the Berlin Declaration on Open Access to Knowledge in the Science and Humanities (2003).

BBSRC: Biotechnology and Biological Sciences Research Council.

BIS: Department of Business, Innovation and Skills.

Block grant: The grant awarded to a University for RCUK and/or Wellcome/COAF funded authors publication costs, administered from central funds.

CC-BY: Creative Commons Attribution licence.

CC-BY-NC: Creative Commons Attribution Non- Commercial licence.

COAF: Charities Open Access Fund, including the Wellcome Trust, Arthritis Research UK, Breast Cancer UK, British Heart Foundation, Cancer Research UK, Leukaemia and Lymphoma Research.

Creative Commons: An organisation providing a set of simple, standard publishing licences for use.

CRIS: Current Research Information System.

Data repository: A repository for research data storage.

DORA: The San Francisco Declaration on Research Assessment.

ECR: Early Career Researcher.

Embargo: A period of time required by the publisher before a manuscript can be made freely available in a repository.

EPSRC: Engineering and Physical Sciences Research Council.

ESRC: Economic and Social Research Council.

Finch Group: The members of the Government commissioned Working Group on Expanding Access to Published Research Findings, chaired by Dame Janet Finch.

Finch Report: The product of the research undertaken by the Working Group on Expanding Access to Published Research Findings.

Fully OA title: A journal exclusively using an Open Access business model.

Fully OA publisher: A publisher exclusively using an Open Access business model.

Gratis: free from price barriers, freely available to anyone with an Internet connection.

Green/Green OA: Open Access route where authors deposit a version of their article in a repository.

Gold/Gold OA: Open Access route where the publisher provides free access to an article at their website.

GW4: Great Western Four, a collaboration between the Universities of Bath, Bristol, Cardiff and Exeter.

HASS: Humanities, Arts and Social Sciences.

HE: Higher Education.

HEFCE: Higher Education Funding Council for England.

HEI: Higher Education Institution/s.

Hybrid title: A subscription journal providing a subset of Open Access articles in the same issue.

Impact Factor: A measure of the frequency an article is cited in a specific journal over a two-year period.

Institutional fund: A fund for Open Access provided internally by the University.

Institutional policy: A University's in-house policy for Open Access.

IR: Institutional Repository, where authors can deposit versions of articles.

JCR: Journal Citation Reports.

JISC: Joint Information Systems Committee.

Libre: Free from most permissions or licence restrictions inhibiting full reuse.

Licence: A publisher's copyright and use permissions.

Mandate: Official order to comply with a set rule, e.g. the rule that University employees must deposit their manuscripts in an institutional repository.

Monograph: Book.

MRC: Medical Research Council.

NERC: Natural Environment Research Council.

NIHR: National Institute for Health Research.

OA: Open Access.

OA publisher: A publishing house operating exclusively with an Open Access Business model.

Paper: Journal article.

PGR: Post Graduate Researcher.

PDF: Portable Document Format.

QR: Quality-related Research (grant, or funding).

RCUK: Research Councils UK.

REF: Research Excellence Framework.

RIN: Research Information Network.

RLUK: Research Libraries UK.

Russell Group: Group of 24 leading UK Universities.

Self-archive: Green Open Access, where an author deposits a manuscript in an institutional or subject repository.

Sherpa: Securing a Hybrid Environment for Research Preservation and Access – a partnership repository consortium.

Sherpa Fact: Sherpa service providing information on funder compliance by publisher.

Sherpa Romeo: Sherpa service providing information on publisher self-archive policy.

STEM: Science, Technology, Engineering and Mathematics.

STFC: Science and Technology Facilities Council.

SPARC: The Scholarly Publishing and Academic Resources Coalition.

Subject repository: Subject oriented cross-institutional collections of self-archived author manuscripts.

Submitted article: A version of a paper that is pre- peer review, and prior to typesetting, formatting and stylistic amendments.

Traditional publisher: Publisher with a conventional subscription business model.

VoR: Version of Record, the definitive published version of an article (HTML or PDF).

Wellcome Trust: A global health charity.

1. Introduction

This chapter introduces the research '*The University of Bristol and Open Access: How are researchers supported post Finch Report?'* It presents the rationale and scope of the study, provides a brief introduction to the research questions, and presents the broader background issues used to frame this research.

1.1. Rationale

In 2012, the UK Government tasked a Working Group to investigate a sustainable way of making published research freely accessible; their research is known as 'The Finch Report' (Working Group on Expanding Access to Published Findings, 2012a). The recommendations of the report were acknowledged by RCUK in 2012, and acted on in 2013. As a major provider of public funds through grants awarded for research, RCUK were well positioned to implement the recommendations through a mandate requiring authors to make their research output available as Open Access (OA) through either 'Gold' (author pays) or 'Green' (self-archive) routes (RCUK, 2013); RCUK's preference is for immediate, unrestricted access via the 'Gold' route, and institutions are provided with block grants to fund payments.

Responding to the mandate presents many challenges for Universities. At a general level, it necessitates learning policy requirements, setting up and communicating new policies, upgrading systems to obtain better information about research output and funders, delegating responsibilities and drawing up new workflows (RIN, 2013); more specifically, it increases academic time, and library time administering the financial aspects of individual articles rather than subscriptions; these are not easily identifiable, compounding the burden of implementing the mandate (Research Consulting, 2014). Such costs are hidden in simple analyses of the block grant's use and are not recoverable from the fund, but they are significant. Embargo periods, licences and the required education

effort communicating the policy are also of concern to the academic community (RCUK, 2015b, p.5), and are a source of much confusion for authors.

This research focusses on how the University of Bristol is coping with the challenges of implementing RCUK's mandate. Summarising key points taken from research conducted by the Research Information Network (RIN, 2013) this work identifies the following issues as central to embracing RCUK's mandate and facilitating a sustainable and workable OA policy. Institutions must:

- Develop effective, efficient and user-friendly systems and processes which guide researchers through compliance with policy, providing the best foundation for achieving compliance targets;
- Fairly allocate funds between different individuals and groups, and Schools and Faculties;
- Forecast and budget Article Processing Charges (APCs) overheads, along with the costs, benefits and efficacy of using publishers' membership schemes and/or deposit accounts;
- Recognise research output is a collaborative effort involving different funders, other UK institutions or overseas institutions: accordingly, payments, compliance and monitoring must be managed carefully;

This must be contextualised against academic freedom to publish in the most suitable publications, and the symbolic, cultural and social capital (Bourdieu, 1977; 1984) that compels authors to publish in high impact journals, as in scholarly publishing, 'prestige, quality, and authority [are] sites of symbolic economic interchange for both cultural and material capital' (Eve, 2014, p.44). This leads to incompatible drivers for the author/library/publisher triad.

Making research OA can be a relatively simple process, but stakeholder tensions make it complicated and time consuming. The majority of this time and energy falls to the department administering the fund and monitoring compliance, which at Bristol – and for the majority of institutions (RIN, 2013) – is the library.

1.2. Scope of the study

RINs paper underscores the terrain's complexity for institutions, whose outputs, funding, culture and existing infrastructure vary enormously. Examples of institutional disparity cover a number of overlapping areas; institutions such as University College London (UCL) and Exeter have pre-existing OA policies or mandates for research output, whilst others have already responded proactively in anticipation of the next Research Excellence Framework (REF); other universities have used RCUK's mandate to 'engineer cultural change' (RIN, 2013, p.9) by investing in staffing and advocacy, whereas others do not have the resource or institutional buy-in. Some universities received a pump-prime fund from the Department of Business, Innovation and Skills (BIS), but many did not. Thirty UK universities had pre-existing APC workflow models though their administration of the Wellcome Trust's block grant.

Bristol received the BIS fund, and has a Wellcome Trust block grant, providing strong foundations for developing robust policies and processes to support RCUK's mandate. Bristol has scaled their Wellcome Trust workflow up for RCUK invoices, but also has a number of prepay arrangements with publishers, each of which require slightly different workflows.

Due to the volume and complexity of administering RCUK's block grant, this study will concentrate on Bristol as a case study, and not seek to compare directly with other institutions. Comparisons are extremely complicated; each institution has varying levels of research output, and therefore concomitant funding; some have supplementary institutional funds to draw from; processes and monitoring procedures are divergent; there is greater or lesser use of prepayment accounts; staffing levels and institutional responsibilities are different (some OA teams include the Institutional Repository and/or Data Repository); differing provisions of the RCUK's block grant amount. The word limitation of this dissertation means it cannot provide the level of granularity required to explain the subtle but important differences between institutions.

This is not necessarily detrimental to this research; using one institution as a case study provides a greater focus for the specific research questions, and more precision when answering them. Geertz (1973, p. 26) asserts:

> *[T]he essential task of theory building here is […] not to generalize across cases, but within them […] The diagnostician doesn't predict measles; he decides if someone has them.*

Holding one institution under a diagnostic lens provides a clear, site specific, contextual analysis of the key issues RIN (2013) state institutions need to be cognisant of. This need for context will be discussed further in the research methodology and design chapter.

1.3. Research Questions

The issues defined by RIN (2013) offer a useful framework to derive research questions from: using this to analyse Bristol's procedures establishes the level of support for researchers and ascertains how the developing processes and policy can better promote a culture that builds on and advances the philosophy of OA.

The research will examine the following questions:

1. *Does the level and type of support offered by the library meet the needs of researchers complying with RCUK's mandate to publish research output as Open Access?*
2. *Are procedures for distributing funds, making payments for articles and monitoring use and compliance of the RCUK block grant effective and efficient?*

Examining these interrelated questions will broaden into discussion in five key areas:

- Symbolic capital as a motivator for publishing in high impact journals
- Current marketing and support for researchers;
- Current APC distribution of the block grant;
- Administrating and maintaining data regarding APCs;
- Externally imposed limitations restricting existing arrangements;

This research provides a qualitative examination of a research-intensive university library's attempts to develop, adapt and refine its working practices in the rapidly changing landscape of scholarly communications. It builds on the Finch progress report (Working Group on Expanding Access to Published Findings, 2013), and RIN's research regarding the policies and procedures adopted by universities (RIN, 2013) through a focussed case study of a library's management of OA publications at a prominent University.

The following chapters will review the literature relevant to the OA agenda and the research questions, summarise the research methods and design, discuss the findings, and present a concluding summary to the research, including recommendations for administering OA, and for further research.

2. Literature Review

> *The basic idea of OA is simple: Make research literature available online without price barriers and without most permission barriers Suber, (2012, p.8).*

Suber's statement clearly communicates the straightforward idea of OA, but as it turns the existing scholarly publication model on its head, establishing OA as the norm is a more contentious matter. The varied stakeholders have conflicting agendas, differing and well-established patterns of behaviour, incompatible needs and divergent opinions on how it can be sustainably achieved, even within stakeholder groups. Suber, an outspoken advocate of OA, recognises this and bluntly states the obstacles to mainstreaming OA 'are not technical, legal, or economic, but cultural' (2012, p.9).

Since 2004, the government has recognised it should 'act as a proponent for change on the international stage and lead by example' (House of Commons Science and Technology Committee, 2004, p.3). RCUK is following through on this commitment by taking a different and proactive approach to cultural change; the UK is leading global peers in a collaborative initiative through policy providing a template for a cultural shift to OA over the next five years.

This research examines how Bristol supports its researchers during this cultural transition to OA. As institutions are in different positions with their budgets, workflows and policies, it only illustrates how a Russell Group University with a sizeable research budget manages OA. Whilst Bristol is not indicative of all institutions, it has many similarities with others of its size and status, and the general challenges faced implementing RCUK's policy, particularly with regard to advising authors, are comparable with the majority of UK Higher Education Institutions (HEIs).

The chapter will begin with a brief summary of the Finch report, recognising its importance and influence in the OA agenda, focussing on the tensions and challenges it raises; UK institutions are steered in specific ways through the report's influence on RCUK policy; this is beginning to influence publisher policy in turn. Abridged definitions of OA further contextualise the area, providing the common terminology used, highlighting three key texts in OA movement. Finally,

the specific requirements of RCUK's policy will be stated, and the compliant publishing routes and funding budgets detailed.

2.1. Scholarly communications' 'intricate ecology' and the Finch Report

Published in June 2012, The Finch report proposed recommendations positioning the UK as a pioneer in embracing the transition from conventional scholarly research publishing towards OA. The group's terms of reference were:

> *[T]o provide a means through which representatives of the HE sector, research funders, the research community, scholarly publishers, libraries and other interested parties can examine how most effectively to expand access to the quality-assured published outputs of research; and to propose a programme of action to that end (Working Group on Expanding Access to Published Research Findings: ND).*

Their objective was to find an innovative and balanced model for expanding research communications' availability to all audiences using the three key criteria of *accessibility*, *sustainability* and *excellence*. Independently commissioned by the government, the Finch Group membership represented libraries, the research community, publishers, the government, research funders and senior institutional managers of universities: the primary constituencies whose interests and priorities needed to balance to produce an acceptable and sustainable outcome for all stakeholders in the present climate, and in the future. Gold or 'author pays' OA was the overall recommendation, leading some to argue that 'the Finch vision is for a fully Gold OA world' (Ayris, 2012).

2.1.1. Tensions and criticism

Tensions between the research communications system, potential risks to revenues and the global climate for change made the production of recommendations a challenging task, and the report is not without criticism. The

conflict of interests between stakeholders is the main consideration. The Finch report details stakeholders, and their interests, as follows:

Researchers – Researchers have the right to academic freedom, and a need to publish and disseminate the research undertaken in a speedy and effective manner; this maximises their works' impact and allows them to obtain credit for work undertaken, which is critical to progressing career prospects. Journal impact factors influence the decisions of researchers concerning the titles in which to assert their right to academic freedom; specifically the freedom to 'pursue opportunities to place … research where [it is believed] it will have the biggest impact on the audience' (Grayson, 2013) as 'researchers acknowledge an intrinsic hierarchy… and adjust not only their submission but also their reading strategies accordingly' (Brembs et al., 2013); the hierarchy steers authors to publish in journals which will increase their social capital, through publication, and their symbolic capital, through increase in reputation (Eve, 2014, p.45).

Academic authors exist within a specific 'habitus' (Bourdieu, 1977) with culturally distinct tastes, socialised norms, skills and expectations, and practice within fields where they compete for the distribution of different types of capital; understanding these rules allows successful navigation of social environments. Symbolic capital is the social currency used to gain a position within the group; it is:

> *[A] form of power that is not perceived as power but as legitimate demands for recognition, deference, obedience, or the services of others' (Swartz, 1997, p.90).*

Publications with high prestige are therefore highly attractive and potentially lucrative, but this self-perpetuating cycle ties authors to publications that may limit access to and reuse of their research output (SPARC Europe, 2014). Hybrid OA publication models are now offered by many high impact journals, but at a greater cost (see 2.2.6).

Institutions – Researchers' academic freedom connects with the correlating interests of the institution, where the measurement of research performance has a direct effect on the Quality-related Research (QR) grant provided by the Higher Education Funding Council for England (HEFCE), in addition to providing additional forms of research income, for example, through capital investment from

industry. However, institutions' prestige and symbolic capital also increase through their employment of authors who publish in high impact journals.

Funders – Funding bodies' concerns in maximising their investment also need to be reflected in the matrix; proving value for money through the impact of research is crucial to maintaining funds received by central government. OA research has more visibility, and impact (see 2.3.5.).

Learned societies – These, and other not for profit organisations, have limited opportunities for income, thus subscriptions to the niche publications they offer provide valuable revenue streams; moreover, they have less resources to administer, maintain and publish in complicated compliance systems, and are struggling to keep pace with the requirements of fast changing funder policies (see 4.1.).

Publishers – arguably the most powerful group, publishers wish to sustain their economic and symbolic capital; in addition, large publishers produce many of the publications with the highest Journal Impact Factors (JIF) in their fields - the titles researchers desire publication in. Impact factors are time dependent, as they are calculated by averaging the frequency of article citations in the two years following publication; more subtly, prestige (and thus symbolic capital) is also built over time. Embryonic fully OA publications are doubly disadvantaged in this model. Impact factors are calculated from the Journals Citation Report (JCR), a product owned by Thompson-Reuters publishers, adding to the conflict of interest.

There is a challenge to the authority of impact factors as an indicator of quality: The San Francisco Declaration on Research Assessment (DORA: 2013) disavows the use of journal-based metrics, particularly with regard to assessing individual articles or a researcher's contributions, or when hiring, funding, or promoting individuals. HEFCE and the Wellcome Trust have both signed the declaration. Traditionally measured impact factors importance is heavily contested by the OA movement, and with the networked society, the validity and use of different, non-traditional metrics are being explored, though these too have imperfections; there is potential for populism, or technological cheating, through the production of multiple social media accounts, and metrics are limited to determining downloads, rather than use (Eve, 2014, p. 51).

Each of the stakeholder groups – researchers, institutions, funding bodies, learned societies, charities and publishers – face rising costs and shrinking revenues, As such, the Finch report recommends a measured approach to protect:

> *[T]he intricate ecology of research and communication, and the support that is provided to researchers, enabling them to perform to best standards, under established publishing regimes*

whilst countering the potential for 'an inability to sustain high-quality services to authors and readers' (Working Group on Expanding Access to Published Findings, 2012b).

Further questions are raised by the global and collaborative nature of scholarly endeavour; the UK has played an important role in furthering the OA debate, but its influence in challenging the conventional publishing model is limited as the UK produces only 6% of global annual research articles (Working Group on Expanding Access to Published Findings, 2012b); a lesser proportion of this is RCUK funded.

Critics of the Finch report are dissatisfied with the inference of Gold OA as immediate access and Green OA as delayed access; Harnad (2013) asserts this is inaccurate, as over 60% of subscription journals do not require an embargo period. However this research argues Harnad's figure may be skewed, as high impact journals represent a much smaller percentage than his total indicates, and in many cases, publishers embargo periods are activated when institutional or research mandates require the deposit of an accepted manuscript in a repository – such as RCUK funded research.

2.2. Open Access defined

Having illustrated the interrelationships and tensions between stakeholders to set the foundations, it is now necessary to define the specifics – what OA is, what it has to do, and how it is done. OA is a straightforward concept that makes research materials accessible free of charge and free for use and adaptation in a

variety of ways. In the scholarly domain it is generally associated with peer-reviewed research output in the form of articles, but OA also applies to other documents, such as monographs, monograph chapters and conference proceedings. As the aim of this research is to analyse how a University supports RCUK funded authors, research articles will be the exclusive focus.

OA literature is 'digital, online, free of charge, and free of most copyright and licensing restrictions' (Suber, 2012, p. 4). OA has different subsets, but for literature to be truly OA, it must meet two specific conditions; price and permission barriers must be removed.

2.2.1. The BBB definition of OA – *libre* and *gratis*

Three key documents are highly influential in the OA movement – the Budapest Open Access Initiative (2002), the Bethesda Statement on Open Access Publishing (2003) and the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (2003). These documents, known collectively as the BBB, define OA as freely available – *gratis*, and free from restrictions on permissions for use – *libre* (Suber, 2012*).*

OA removes price barriers for all articles, providing *gratis* OA, but permissions are removed to a greater or lesser extent when providing *libre* OA; *libre* is the goal of the OA movement. Copyright and licences for reuse can vary, but consensus is that for material to constitute *libre* or truly OA, price barriers *and* permissions barriers need to be removed (Suber, 2013).

There is an explicit requirement for correctly attributing the authors. The Budapest document states authors retain 'control over the integrity of their work and the right to be properly acknowledged and cited' whilst the Bethesda and Berlin documents state OA authors must consent in advance for users of the material to 'copy, use, distribute, transmit and display the work publicly, and to make and distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution of authorship' (Suber, 2013, p.8).

2.2.2. Routes to OA

OA has two routes – Green, and Gold. Each of these provides *gratis* access to the material, but authors need to be aware of the benefits and limitations of each route.

2.2.3. Green OA

Green OA is delivered by an institutional repository (e.g. Bristol's Pure) or subject repository (e.g. ArXive). Authors deposit and self-archive a version of their material, including articles published in traditional subscription journals. This option is available to any researcher, at any career stage, free of charge; Bristol's institutional policy encourages Green OA to reflect its equal accessibility across disciplines and career stages. Many funders require the self-archive of post- peer-review versions of papers, with release to the public within acceptable maximum embargo periods.

2.2.4. Problems with the Green model

Publisher agreements signed by the author restrict which versions can be used freely. The pre- peer-reviewed version can usually be self-archived, but post-peer-reviewed versions are the versions funders require, and these are generally subject to an embargo period calculated by the publisher by comparing usage rates between and within subjects, and calculating the time required to recoup costs through subscriptions (Kohlman, 2014). Publisher agreements rarely allow the publisher's PDF or Version of Record (VoR) to be used, but authors often attempt to self-archive the published version. Funding and institutional mandates also invoke or lengthen embargo periods.

Publisher, Research Councils and Institutional Repositories (IR)/Current Research Information Systems (CRIS) terminology is not standardised, and authors struggle to compare the publisher and IR/CRIS terms for the version they want to self-archive; this compounds confusion regarding what the publisher will allow (see

Appendix I for an example communication regarding terminology and allowed versions).

Green does not challenge the dominant subscription model of academic publication overall: publishers still retain subscription revenue, whilst for authors and readers, it 'delivers an imperfect version of the article… several months after publication' (Mabe, 2012).

2.2.5. Gold OA

Gold OA is delivered by the publisher; by traditional publishers through hybrid titles, where a subset of subscription content is freely available to all in an issue combining OA and subscription articles (Eve, 2014, p.59) such as Wiley's *Palaeontology*; through fully OA titles offered by traditional publishers, such as Springer Open's *Applied Informatics*; or by fully OA publishers titles, such as PLoS's *PLoS One*.

An APC is often paid to the publisher to cover production and hosting costs. Some OA journals do not charge, but cover costs through other revenue streams, including advertising, membership or auxiliary services. The publisher controls the business model, and journals convert from a hybrid model to fully OA; *Nature Communications* is a recent conversion.

2.2.6. Problems with the Gold model

Gold OA disadvantages authors without funding, as they cannot publish Gold in hybrid publications, or at all in fully OA titles like *PLoS One* or *BMJ Open*. Though APC waivers exist, they are commonly reserved for developing countries – PLoS, and BioMed Central offers these options.

Early Career Researchers (ECRs), institutionally or self- funded Postgraduate Researchers (PGRs) at institutions with no institutional fund (such as Bristol) authors between institutions or research grants or at universities with negligible block grant funding are disadvantaged compared to established senior staff with a

history of research grants and output, as these factors secure further funding; this becomes more relevant when the individual researcher compares their position to authors at other institutions, or worse, to authors at their own.

From a disciplinary perspective, Research Council funding is heavily skewed towards the life and physical sciences (Solomon and Bjork, 2012a; Curb and Abramson, 2012); authors from disciplines where funding is scant, or where monographs are predominant – the humanities, arts and social sciences (HASS) – are at a greater disadvantage. This will be discussed in context in 4.2.1.

The concept of 'double dipping' remains an issue; institutions that pay APCs now pay to view *and* to publish, the burden of which falls on research-intensive universities with block grants. Despite obtaining revenue from subscriptions, well-established traditional publications with high impact factors charge more for their hybrid journal APCs than lower ranked or newer OA journals, irrespective of whether traditional or OA publishers own the titles. Research by Pinfield, Salter and Bath (2015) examples average APCs for the three combinations of journal/publisher:

- $1,418 for a fully OA journal from a OA publisher;
- $2,097 for a fully OA journal from a traditional publisher;
- $2,727 for a hybrid journal from a traditional publisher;

Data in this research confirms this trend; the average cost of publishing with traditional publishers is more expensive than with fully OA publishers, despite the application of prepay discounts (see 4.3.2.).

Gold may lead to a two-tier system for these reasons – individual, institutional and discipline biases in funding and publication, and the higher costs of publishing in high-impact journals – leaving only established, funded researchers in hard science disciplines able to publish Gold in prestigious journals, and the remaining researchers publishing in traditional journals and self-archiving, without immediate access.

2.3. Why does the system need to change?

There are three key interrelated reasons why change is necessary: the publishing model's bias towards the publisher rather than the author; publishers' monopolies and their economic stranglehold on an unusual market with specific economic constraints; technological advancement and concomitant user expectations. When considered as a whole, it becomes apparent that the dominant model is no longer sustainable.

2.3.1. Traditional subscription publishing

In the traditional publishing model an author submits a manuscript to a publication, chosen through a consideration of the journal's reputation, impact factor, the field's specialism, and author preference. The journal presents the manuscript for peer-review, where it is assessed and commented on by journal selected specialists in the field; suggestions for improvements are made to the author, or if the reviewers agree the quality is sufficient, it is accepted for publication. If alterations are required, the author receives comments, amends the draft accordingly, and resubmits the manuscript. It is subsequently accepted for publication, re-reviewed and sent back to the author for additional editing, or rejected.

On acceptance, the author signs a transfer of copyright or an exclusive licence to publish agreement, and the article is later published exclusively in a subscription journal. The intellectual and time-bound labour undertaken to achieve the finished article is loaded towards academics. What makes this counterintuitive for the scholars whose time and energy have been spent during the process of turning a manuscript into an article is that the publisher is the only agent being paid. Authors, peer-reviewers and most often the editors do not receive any royalties from their work; their rewards are less tangible, and instead relate to a mutual reinforcement of their perceived symbolic and social capital (Eve, 2014: 50), and the potential for an increase in reputation and status, though this is not guaranteed (Suber, 2012, pp. 17-19, 37).

2.3.2. The bias of the priced, printed, peer-reviewed and copyrighted model

Until OA challenged the model for scholarly communications in traditional or conventional publications, articles followed this 'priced, printed, peer-reviewed, [and] copyrighted' model (Suber, 2012, p.166), one heavily favouring the publisher's interests, allowing 'publishers to confer prestige' (Eve, 2014, p. 49) behind a paywall, limiting the breadth of the research's impact.

Priced publications deny the widest audience and greatest visibility by only allowing those with publication subscriptions to access publications. Conversely, as subscriptions are the only way scholars can read and build on others' research, the publisher is guaranteed a high level of demand and revenue, adding to their symbolic and economic capital.

Printed journals provide sole access; publishers have a monopoly on dissemination of research articles in scholarly communications. The House of Commons Science and Technology Committee note 'there is a lack of substitutability in the market' (2004, p.14); the Royal Academy of Engineering state 'journal articles are not interchangeable; their uniqueness is one of their essential qualities.' This monopoly is sustained by authors' drive to publish in prestigious journals, increasing their symbolic, and therefore material, capital (Eve, 2014, p.50).

Delays in making research available further disadvantage the author. Limiting article access to printed matter requires a steady number of pages or articles in each bound volume, whilst accepted articles 'queue' for their slot in the printed journal issue. Many more articles are submitted than accepted and published (adding to the exclusivity of publishing in prestigious journals), and as a result, peer-review developed as the mechanism for filtering articles.

Peer-review was not widespread in scientific journals until the middle of the twentieth century (Suber, 2012; Burnham, 1990). Nielsen (2009) comments the process is driven by three factors: science's increasing specialisation in the early twentieth century which challenged editors' abilities to reach decisions on accepting articles (see also Burnham, 1990); growth in the volume of papers submitted, increased through author numbers and an escalation of the importance

of publications for securing tenure, grants and awards; technological improvements for writing and distributing papers which allowed publishers to introduce a filtering or quality control system for accepted articles, allowing for an increase in accepted papers. The growth of highly specialised fields, increased paper submissions and the emphasis on publications as a measure of worth also results in publishers 'twigging' parent titles into more specialised publications (Case and John, 2007), providing potential for greater revenue streams.

Copyright protects these streams; authors sign an agreement with the publisher, which often transfers the rights to publish and distribute a work from the author to the publisher, usually exclusively. The priced, printed, peer-reviewed and copyrighted model therefore sees 'author gifts turned into publisher commodities' (Suber, 2012, p.19). This model favours the publisher as they retain copyright on the material and obtain revenue from the publication; authors' rewards are tied to publishing in their prestigious publications, which is dependent on their sustainability and the perceived symbolic capital of their exclusivity (Eve, 2014, p. 49). Understanding this cycle illustrates the publisher's influence as a major stakeholder, and the reluctance of both parties to change a system developed to protect publisher interests.

2.3.3. Publishers' monopolies

Publishers have capitalised on this model, but a backlash has occurred. Since the late 1980s, annual increases in journal subscriptions have outstripped the rate of inflation. Research Libraries UK (RLUK) report UK universities 'pay an estimated £192m per year to publishers for journal and database access;' this is almost 1/10th of the annual Quality-related Research (QR) grant provided by the HEFCE (Research Libraries UK, NDa). The largest price increases are in the Science, Technology, Engineering and Mathematics (STEM) disciplines. In 2004, the House of Commons Science and Technology Committee noted 'average journal price increases of 58% between 1998 and 2003' for STEM related periodicals (2004, p.5). However, the end user is insulated from the price rise, as libraries procure journals on their behalf – either individually, or more often, in 'big bundles' containing high impact titles from larger publishers, specifically designed to exploit

their symbolic capital. An interesting point made by Kingsley (2014) is that centrally managed OA funds fail to address this disconnection, as:

> *[I]t once again quarantines the researcher from the cost of publication, returning the status quo between libraries/institutions and publishers.*

Wolf (2014) also asserts prepay accounts in particular:

> *[R]un the risk of divorcing researchers from the economic impact of their publishing decisions.*

Libraries are not typical consumers, as they will spend their total budget irrespective of the number of journals or articles available; if prices and the number of articles increase, they will simply obtain access to a smaller percentage of titles and focus more strictly on high impact titles which are core to the department or School's research portfolio. Large publishers can increase the price of big bundles containing high impact titles with near impunity, knowing they will be purchased, whilst smaller publishers or society publications find their subscriptions cancelled. Inevitably, loss making titles are cancelled by publishers (House of Commons Science and Technology Committee, 2004, p.14), but unfortunately, ECRs often cut their publication teeth in lower impact journals, working up to more prestigious journals over time. Focussing library spends on higher impact titles is a detrimental path for researchers and users alike.

2.3.4. Technological advances

Technological and societal changes pose a challenge to publishers' primary position as owners and vendors of research materials. The Internet provides potential for earlier access to articles, published online weeks or months before they appear in printed issues (where they are subscribed to, or produced: both are in decline). Users want digital versions, and expect them earlier; the result has been a sharp decrease in the viability of printed journal subscriptions, which require print production and space.

The Internet changes researchers' access expectations to the 2,000,000 research articles published a year, and how easily they can be manipulated. This coincides

with increased expectations to gain free, immediate access to historic publications. Users also want the most up to date services and tools, to facilitate effective strategies for analysing, organising, manipulating and data mining the content of publications.

2.3.5. Visibility and citations

There are additional benefits to choosing publishing routes that provide free access. OA articles increase the visibility of research, which encourages more frequent citations, accelerating the research lifecycle of publication – reading, citing and building on research outputs – and offers more opportunities for discovery by potential research partners. An increase in the digital availability of material naturally combines with OA publications; this sea change in the way material is published, accessed and shared requires alternative metrics (e.g. Altmetrics and Plum Analytics) to calculate social media, citations, blogs, news articles, downloads and comments for articles and offer a more digitally savvy way of looking at impact.

OA showcases an institution's research profile and strengthens ties to industry through knowledge transfer (RLUK, NDb). It provides funder mandate compliance, facilitates collaboration, sharing and knowledge exchange to increase intellectual wealth, and benefits the wider public, demonstrating universities' value to society (Eve, 2014, p.53).

2.4. Finch report's recommendations.

The government accepted the Finch report's recommendations in July 2012. The government also announced its intent to establish a Research Transparency Sector Board to develop an open data policy, analogous to the work undertaken by the Finch Group. OA and Open Data share the same genetic code; by developing both, the UK government aims to improve access to publicly funded research, and fuel 'new discovery and innovation, and ultimately economic growth

and societal benefit' (Business, Innovation and Skills, ND). This dual pronged attack supports the transition towards greater transparency and an open culture for research output and the data underpinning it, which is echoed in RCUK's policy.

2.4.1. Revisions

Discussions with stakeholders highlighted concerns with the original document, leading to a softening of the approach from Gold, to a Gold *or* Green model. RCUK developed their policy 'in parallel with the thinking of the Finch Group' (RCUK, 2015b); as such, little time was given to institutions to prepare clear and robust workflows for administration or compliance reporting, both of which are key to supporting the policy; the onus for rapidly developing a workflow has invariably fallen to libraries.

2.4.2. Implementation

Libraries administer the grant in the majority of institutions surveyed by RIN (2013), but there is little published research detailing how this is tackled. There is some information available from JISC Pathfinder projects, for example 'End-to-end' and 'HHuLO,' but the projects provide little in-depth analysis. Ayris (2012) and Ashworth et al. (2014) give some detail on University College London (UCL) and Glasgow respectively, but it is difficult to compare between institutions with dissimilar research budgets and output. At OA administrator workshops and events, there is a sense that libraries and staff are still 'feeling their way' with RCUK's policy; the lack of published research underscores that libraries are still in reaction mode, and are too busy administering OA to have time to write about it.

In September 2012, BIS provided £10 million 'pump-priming funding' to 30 research-intensive universities to assist in preparation for OA post Finch report. The purpose was to help fund APCs, repository development and advocacy campaigns. Bristol received the fund.

Research undertaken by the Research Information Network (RIN, 2013) underlined that many universities struggled to spend their BIS money by the deadline, and instead added it to their block grant. Remaining BIS funds, which could be used for any OA publication, are now in the same fund as RCUK only funds.

This is the case at Bristol; Bristol received £361,000 of BIS money; by the 31st of March 2013, BIS funds still remained. The balance was added to the RCUK block grant following an HE sector wide extension to the spending deadline, though BIS money has since been accounted for through topping up prepay accounts.

2.4.3. RCUK's Response

In July 2012 RCUK announced their OA policy, replacing policies previously set out by the individual Research Councils. The library checks these conditions are met when authorising payments and monitoring compliance. From April the 1st 2013, any peer-reviewed, non-commissioned, original article published by RCUK grant holders must comply with specific requirements:

- Publish peer-reviewed original research and review articles in journals compliant with RCUK's OA policy;
- Provide details on the funding that supported the research;
- Include a statement on how materials used in the research can be accessed.

There is no requirement for the data to be open. Authors can comply by stating where the relevant materials are available from, for example, if they are included in the article, or by providing contact details for requesting access to the supporting data, or by making the data open through provision of a data set in a repository. Nature, PLoS and The Royal Society support the open data agenda, with some offering space at data repositories, for example, Dryad.

RCUK aims to steer publishers towards OA, and there are indications this is happening; RCUK reports The Publishers' Association cites 75% of UK published journals are available with a Gold OA option, and Elsevier and Taylor and Francis

both describe significant policy engagement and an increase in the number of titles offering RCUK compliant OA publication options (RCUK, 2015b).

2.4.4. RCUK's Budget

The budget for implementing RCUK's block grant in the first three years totals £59.6m (RCUK 2012; RCUK 2015a); the 2013/14 block grant's allocation was £20m. However, research shows the total cost of publishing for the period was at least £20m; £11m for APCs, with the remainder calculable administrative costs, though it emphasises a proportion is incalculable and non- recoverable through the block grant (Research Consulting, 2014).

2.5. RCUK compliant options

There are three publishing options for RCUK funded research articles; compliance targets increase incrementally over the five-year transition period.

- **Option 1:** The Gold route providing immediate access to the article with payment of an APC (if funds are available, and a compliant route is offered by the journal). The journal must offer a CC-BY Creative Commons Attribution licence, to maximise exposure, permit data mining, and reuse of content, even for commercial purposes, providing proper attribution is made.
- **Option 2:** The Green route depositing an accepted manuscript in the institutional repository. Articles should be available immediately, though embargo periods are often in place. Each research council has a maximum embargo period in their mandate; STEM disciplines' limit is six months, HASS allow up to 12 months. Both of these can be lengthened to 12 and 24 months respectively where there are no funds to pay APCs, or the journal has no compliant Gold OA route.

- **Option 3:** The non-compliant route in subscription journals if there is no other option. This will be phased out over a five-year period: 100% compliance is expected by year 2017/18.

2.5.1. RCUK targets

RCUK provides clear OA publishing targets for its research. In 2013-14 (Year One), RCUK funded research has a Gold compliance target of 45%, rising to 75% by Year Five. In Year Three, RCUK expect a 60% Gold compliance rate. By the fifth year, RCUK expect 75% of funded papers to be made accessible through the Gold route, with the remaining 25% available through the Green route. Table 1 shows the five-year transition targets.

HEI publications	Year 1 2013/14	Year 2 2014/15	Year 3 2015/16	Year 4 2016/17	Year 5 2017/18
% Gold	45%	53%	60%	67%	75%
No. Gold	10.5k	12.3k	14.0k	15.6k	17.5k
APC fund	£17M	£20M	£22.6M	tbc	tbc

Table 1. Five year transition targets. RCUK (2012) Implementation and guidance meeting notes.

2.6. Bristol's position – funds, and compliance

As with the majority of HEIs, the University of Bristol's OA Team is situated in the library; it has managed all of the funds made available to support the OA agenda. Table 2 details the funds received from BIS and RCUK from September 2012 to the present date:

BIS pump-prime 2012-13	RCUK Year 1 2013/14	RCUK Year 2 2014/15	RCUK Year 3 2015-16
£361,000	£581,597	£ 684,232	£780,834

Table 2. BIS and RCUK funding for OA, 2012-16.

In RCUK Year One, Bristol achieved the target, with a 45.9% compliance totalling 302 OA articles. 245 of these were Gold (81%); the remaining 57 (19%) were Green.

As authors rarely contact the team prior to an article's submission, influence on publication choice is negligible, but the Library is pivotal in securing researchers' compliance with funder policy through the fund's administration. Great care and diligence is paid to the type of article, the funder, their policy, and the journal's publication policy before payment is authorised by the team. The advice and steering given is crucially important in the fund's correct administration, as it impacts on monitoring and reporting policy compliance to RCUK. The team's involvement with the academic community has an impact on engagement and promotion of the agenda, but also influences this research, and how it was undertaken. The following chapter will cover the research methodology and design used for the study.

3. Research Methodology and Design

This chapter explains the methods employed in this research, and discusses how they were decided upon as appropriate strategies to answer the research questions.

3.1. Methodological approaches

A mixed methods approach was employed. Information has been drawn qualitatively, through ethnographic field notes made during the first six months as OA administrator, a role that provides a strong element of participant observation. A tried and tested method in the social sciences, particularly anthropology and sociology, participant observation offers researchers the opportunity to understand people's activities in the natural setting, through observing and participating in those activities (DeWalt and DeWalt, 2002). Reflexivity was considered carefully with great degree of self-reflection of the effect of the researcher's subjective position on observation and the data. This was balanced by quantitative data for the year 2014 drawn from the Joint Information Systems Committee (JISC) 2014 report, the 'All Gold' spreadsheet Bristol uses to administer the fund, and additional specific reports written by the OA team. Finally, a light touch content analysis was applied to the relevant policy documents from RCUK, then compared to institutional policy and advice given to authors on Bristol's OA website. This assisted the participant observation element of the research, as it gave an understanding of the complicated nature of the policies that may otherwise elude those not fully embedded in their administration.

3.1.1. Ethnography

Lincoln and Guba (1985, p.189) suggest:

> *Inquiry must be carried out in a "natural setting" because phenomena of study, whatever they may be – physical, biological, social, psychological*

> – take their meaning as much from their contexts as they do from themselves *(original emphasis).*

Ethnography was the instinctive choice for the qualitative element of this research; ethnography affords an opportunity to walk in the other's shoes, which is key to understanding how Bristol supports researchers in the transition to OA.

An accelerating trend towards user centred approaches in library science is evident, particularly in relation to the role current and future library models play in the lives of their users; Khoo et als analysis of ethnographic library research (2012, p.86) argues:

> *[there is] a coherent and emerging research genre that uses ethnographic methods to investigate libraries, their users, wider social contexts, and the relationships between these phenomena.*

Research is concentrated on library user experience in the physical library in the articles detailed by Khoo; study space (Applegate, 2009; Hobbs and Klare, 2010; Suarez, 2007); information seeking behaviour (Bartley et al., 2006; David and Zeitlyn, 1996); or digital libraries (Duncker, 2002; Turner, 2008). There is nominal ethnographic research concerning academic researchers library needs (Barry, 1995; Haglund and Olsson, 2008). Undergraduates are the focus in the majority of studies, with faculty mostly overlooked. There is an absence of ethnographic research on the impact of OA mandates on academic authors.

There is a timely and urgent need to address this deficit. Any discrete social group has a culture distinguishing them from others; they have different sets of common understandings organising action, expressed through nuanced language specific to the group (Becker and Geer, 1957, p.29), and distinctive cultural practices. Academics are no different to other socially bound parties; identifying the support they require demands an understanding of their cultural group.

Academic culture's preference for electronic communication provides an abundance of naturally occurring data, encountered through the gateway of the administrative post. The team's email account contains approximately 10,000 emails for analysis, covering a period from 01/04/2013 – 31/03/2015; in 2014, there were 5,059 emails, of which 2,823 were sent mail. Previous experience with

ethnographic research of texts in online environments provided a solid foundation for this study; almost without exception, communications are by email, providing a wealth of case based narratives from which to pull themes for research questions, and more detailed analyses.

Communications between the OA team and academics are spontaneous, topical, and naturalistic, occurring during the normal flow of conversation of advising authors and administering the APC fund, allowing the researcher to build a composite picture of the subject. This is in line with what Becker and Geer (1957) term a 'conversational interview', where the development of questions and hypotheses can be explored and pursued naturally through the research subjects' concerns. This guides further research questions and examinations, highlighting overlapping areas and layers of complexity.

Questionnaires were discussed with line managers and senior staff, but were discounted. Soliciting data from authors was felt to be a burden academics would have neither time nor inclination for. Bristol is a risk averse institution, and the implication of RCUK's OA policy has caused uncertainty for some authors. HEFCE's post- 2014 REF policy requirement for OA deposit within three months of acceptance has increased this uncertainty, and provided a greater impetus for OA. The heavy weighting towards STEM subject funding (and, therefore research output) also causes concern for some Bristol authors in light of the REF; anecdotal evidence suggests those without RCUK funding are frustrated by the lack of opportunity for Gold, and this is compounded by HEFCE's policy.

Survey data may also contradict the researcher's own experience of events in administering the fund; with the post- 2014 REF and an impending institutional OA mandate, OA is a sensitive area at Bristol, and as survey participants are self-selected, responses may be biased either way.

The reliability of interviews and questionnaires as a primary method for data collection has been questioned in the social sciences for some time. Becker and Geer (1957) argue a research subject's position in relation to a situation can have a distorting effect on their reflection of event, particularly those that involve a sense of hierarchy, and 'mythology' can develop.

> *Any such mythology will distort people's events to such a degree that they will report as facts things which have not occurred, but which seem to them to have occurred (1957, p. 31).*

Respondents may also be unwilling to talk when answering a question demonstrates misunderstanding. Participant observation counters this tendency, providing a holistic and complete approach to study where the 'distorting lens' of the subject's position in interviews can be avoided. It is 'a yardstick against which to measure the completeness of data gathered in other ways' (ibid: p.28).

The role provides a situated, immersed and close analysis of problems encountered by OA administrators, but is not without effect on the study. Reflexivity highlights the circular relationship between the researcher and the researched, offers the researcher an opportunity to deconstruct their biases and focus on the way their actions affect research outcomes (Woolgar, 1988; Bourdieu, 1992). The administrator's detailed guidance to authors is steered by RCUK compliance, affecting the number of APC payments debited from the fund. However, APC numbers provide accurate data regarding policy compliance, the driver of RCUK's preference for Gold over Green, and the level of facilitation, time and advice required by authors to promote and support RCUK's agenda.

Considering these factors, the best course of action was reasoned to be the use of naturally occurring, unsolicited data. As long as the researcher continually questions possible implications of results and analyses, is mindful of potential bias, acknowledges and compensates for preconceptions, interpretations and assumed values as much as an outsider, participant observation and more broadly, ethnographic research, are valuable research methods, particularly when balanced by robust statistical data.

3.1.2. Fieldwork and notes

Fieldwork is a central part of participant observation. The administrative role is 'fieldwork' allowing rapport to be built with group members through connection to their experience; it allows the researcher to compile field notes, group together themes for inquiry, participate in conversations and understand the difficulties

faced by authors, learning both the job and the cultural background of the research area through routine daily exposure.

Khoo et al (2012) posit that whilst fieldwork is used in 44% of 81 library articles describing ethnography, few explicitly describe the methods used to gather data. This is possibly linked to the lack of publication space for 'thick description' (Geertz, 1973) offered by journals, or the short duration of studies and the lack of potential to undertake fieldwork. Recognising that fieldwork provides researchers a longitudinal and situated understanding of settings where behaviours and interactions take place is an important step towards increasing the quality of ethnographic library research.

This research has carried out a content analysis of e-mail communications to and from the OA team to provide research themes, archiving the records for analysis, and combined it with fieldwork notes recorded over an eight-month period so research themes could be actively explored. Note writing during the research recorded detailed communications capturing the essence of daily activities and the team's level of support for researchers. This methodology afforded an opportunity to more closely analyse external limitations, workflows and communications, and to consider useful improvements to the service.

3.1.3. Data set

Processing claims, paying APCs and monitoring compliance provides a wealth of accurate and robust data for analysis. The JISC 2014 report is drawn from the teams 'All Gold' spreadsheet; this is extremely precise, as it is the sole method for tracking; payments; currencies; VAT; prepay accounts; block grants; invoice numbers and internal references linking claims to the University's purchase ordering system. Both are formatted to allow fine grained filtering – by Faculty, School, author, publisher, cost, licence and individual funder.

3.1.4. Content analysis

Key texts and documents from a broad variety of sources were analysed and interpreted to set the context of OA philosophy; the library's OA webpages were assessed and compared to information from other institutions, Research Councils, RCUK, and the Government, facilitating the assessment of Bristol's position in relation to external drivers. This was further contextualised by examining documents from other constituents in the OA forum. Major themes were captured and a resource of links to relevant documents compiled.

3.2. Research Data Access and Analysis

Research data was accessed through the administrative post and bolstered by publicly available policy documents. These were analysed, with key components compared for complementary and discordant factors.

3.2.1. Insider access

The OA administrator post offers a high level of engagement with authors, establishes an insider's perspective of the challenges faced by administrators and authors alike, providing greater understanding and a clearer reading of how overlapping and contradictory processes and cultures affect the transition to OA. Previous status as a PhD student brings 'added value' as it provides another layer of insider status. Understanding the research lifecycle and the decisions made by researchers about what to publish, and where, brings a unique situatedness to the role and the research, granting a greater appreciation of researcher mentality, their priorities, and the culture of academic authorship.

3.2.2. Data access

A condition for administering the block grant is the requirement to monitor and report OA expenditure on request to RCUK, JISC and other external bodies, and to Faculties, Schools and committees. Administrators have a solid understanding of the rationale for accurately monitoring prepay accounts and the block grant, the types of information required, and the implications of misreporting. This brings insight to the complexities of administering funds which would not be afforded to those outside of the system, as the role clarifies subtle differences between publishers, prepay schemes, invoicing, the efficacy of financial and publication workflows, and clarity concerning how policies and workflows align or jar with the team's and with those of other internal stakeholders, such as Finance, the Research Data Service and Research and Enterprise Development.

The JISC report has been used for the bulk of the data, though data pertaining to the costs and distribution of APCs was compared to data from the start of RCUK Year One for trends in Schools, costs and funders. Due to the sensitive nature of this information, figures were generalised, rather than specific, and authors are anonymous.

3.3.3. Availability of documents

Policy documents from RCUK, HEFCE, JISC, Russell Group, RIN and the University's OA website are all publicly available; some additional documents are only available internally, but have been distributed to other stakeholders. Where these documents have been used, sensitive elements of the data are removed. Using a broad range of documents adds depth to the investigations, provides context for the research questions, but also emphasises how time-consuming and confusing it can be for authors to fully understand what is expected of them, and by whom.

3.4. Ethical Issues

There are naturally confidentiality and ethics issues within the data used. The 'All Gold' spreadsheet contains information about costs; specifically institutional discounts received as a result of prepay schemes and negotiated reductions through subscription packages, which are subject to non-disclosure agreements signed by the University; therefore, the data was assessed carefully. Data that is available publicly would not constitute a breach of confidentiality. As part of the compliance and monitoring report Bristol undertakes is freely available through the JISC 2014 report, this data was used when illustrating APC payment tables for the institution.

Using this report is valuable in more than one way. RCUK Year One ran from 01/04/2013 to 31/07/2014, and RCUK Year Two will end on the 31/07/2015. The JISC report provides clear markers for the start and end of the data collection as it lists APC payments made in the year 2014: this covers the last seven months of RCUK Year One, and the first five months of RCUK Year Two. It provides data that would not be provided by any other means, but also, it balances the increase in the number of APCs resulting from greater awareness of the block grant from Year One through Year Two. Consent was sought from and given by the OA team's line manager, thus, use of the stripped out APC data was approved.

Regarding participant observation, field notes and informed consent, communications sent to the OA team mailbox have been used as the basis for research; these are anonymously quoted verbatim, and abridged, to remove specifics identifying the author. Quotes retain their spelling, punctuation and grammatical errors for authenticity. Authors were contacted by email to obtain consent: the email contained the quote as used in the research (see Appendix II). Detailed responses to queries from specific authors are used but as the author remains anonymous, confidentiality issues are avoided. Svenningson Elm (2008, p. 75) asserts email communications belong to the private environment; access to the OA inbox requires administrator approval. The researcher as participant observer must therefore remain contextually sensitive and be the 'custodian of the data' (Enyon et. al., 2008, p. 24), whilst recognising the value of the communication as a complementary record to the data.

3.5. Reliability and Validity

The research data has been drawn using qualitative and quantitative methods; this has a bearing on the reliability and validity of the research. Both qualitative and quantitative elements have associated advantages and disadvantages with regard to reliability and validity.

Reliability has three elements – consistency, precision, and repeatability. It concerns the capacity for the research to be undertaken by others at another time and yield the same results (Gorman and Clayton, 2005). The primary quantitative element, the JISC 2014 report, is taken from the 'All Gold' spreadsheet, which provides details about APC claims paid by the University. This a robust data set where data is systematically collated and recorded to ensure accurate financial reporting, using guidelines provided by JISC for institutional data collection regarding APC payments, publishers, funders and Faculties; it is adhered to by many institutions, so cross comparisons and aggregations can be made. The JISC report contains standardised fields of information, and has been requested from many institutions. The raw data can therefore be replicated in different institutions using the same fields. The content analysis of key policy documents is read and interpreted across institutions with a high degree of consistency, although local arrangements apply, driven by the discretion of the institution, institutional OA budgets and their RCUK funding.

The raw data produces accurate and reliable statistics regarding what, when and how APCs were paid, and gives a detailed breakdown of funders and Faculties; it does not offer a nuanced reading of the social reality of administering the block grant and the time and level of support offered to researchers in a specific cultural context. This depth and level of detail is what makes research valid, as it contextualises it.

Qualitative elements balance this shortfall. Ethnographic methodology and participant observation offer routes to missing context and site specific information; thus, a sharper picture emerges. Fieldwork and field notes provide first hand evidence of the problems encountered in day-to-day activities by the administrator, and by those requesting advice. This gives the research a high degree of validity, as the research questions are answered in the specific cultural context of the

institution, encompass local administrative and staffing arrangements, the ethos of the research communities within it, and the status of the institution with its associated budgets and strategic aims.

There is a need for transparency, as the role effects outcomes of the research. Whilst the researcher has no influence on where the author has published when an APC claim is made, the researcher is still embedded in the data; through steering authors to the Gold or Green route, or intervening where an author's misreading of Sherpa Fact and Romeo suggests the correct route has been chosen, shaping the compliance monitored for RCUK. It is necessary to recognise the effect the role has on the hard data and the communications between author, publisher and the team. However, this position allows a greater contextual understanding: without it, hard data would be interpreted as a stand alone set of facts, and the effect of interactions between the team and the author at the time of a claim, meaning subsequent advice and support given would be obfuscated.

3.6. Evaluation

The qualitative and quantitative data used provide an appropriate and suitable data set to answer the research questions of this study. There is a symbiotic relationship between the two types of data and their contextual dependencies, both of which are borne out through the working practices and experiences of administering the fund.

The first research question '*Does the level and type of support offered by the library meet the needs of researchers complying with RCUK's mandate to publish research output as Open Access?*' is directly addressed through the qualitative research, as communications providing advice, assistance and advocacy have the biggest impact on support of the agenda. The second question '*Are procedures for distributing funds, making payments for articles and monitoring use and compliance of the RCUK block grant effective and efficient?*' is drawn from the statistical analysis of the JISC report and 'All Gold' spreadsheet, contextualised by field notes, resulting in a composite analysis addressing both questions. The

concluding assessment of areas for improvement (5.4) has been equally drawn from both research methods; its value to wider research in the area is that the findings and recommendations made are applicable to other similar research institutions.

The author recognises this research is a specific case study of a research-intensive university privileged by a substantial RCUK budget, holding large serials subscription packages with a variety of publishers; there is, therefore, a potential weakness in the findings. The research is a subjective analysis of one site, and it may be difficult to extrapolate the recommendations to institutions who are not similarly positioned in terms of funding, research output, infrastructure, procedures, staffing levels and other local circumstances affecting the way the policy is administered. However, the research does offer a useful and unique investigation of the process of supporting researchers and RCUK policy in the transition to OA, adding to the evolution of the limited contemporary evidence in the field.

The following chapter presents findings from the research questions and will analyse them in relation to the key policy documents and existing research in the area.

4. Findings

This chapter examines the research questions to provide details of the present support and administration of OA at the University of Bristol, using a combination of ethnographic research and data from the JISC 2014 report.

4.1. In what ways does the library support researchers navigating RCUK's mandate to publish research output as Open Access?

The OA team provides end-to-end responsibility for OA at the University of Bristol, from advocacy and engagement, advice on an article for self-archive or for Gold OA, authorising and arranging payment, and checking the published article's compliance. Tasks progress in a relatively consistent sequence. The team are currently developing their advocacy and engagement with researchers; this is crucial to promoting the message by inserting OA awareness at the beginning of the research lifecycle. This will be discussed further in 4.1.3. The team's principle tasks are as follows:

Establishing a claim's eligibility

Researchers who are considering their publication options and are aware of OA are supported through advice about Green and Gold routes. Occasionally the author contacts the team to discuss OA options before an article is submitted; information regarding funders can be requested and advice on eligibility for funds given accordingly, but in the majority of cases, it the query is generated at acceptance for publication.

> *One of our papers has been just accepted for publication and we want to make it as an Open access paper. Please could you advice me what should we do? or how could you help us to do?*

> *This is the first time I have received an email from a journal about how I would like my article published…Ideally, I would like to apply for my article to be published as Gold OA and for the university to pay the APC. Is this possible and if so, please advise of the procedure.*

We recently have a paper accepted … and we would like to publish it open access. I was filling the open access form and I can't find a pre-paid account for the publisher. Could you please let me know how to proceed?

Establishing a claim's eligibility is 'query' work, and it rarely provides occasion for standard responses; each case is different and the initial contact rarely provides the information required for eligibility, particularly funder or publication details. Authors are guided to the route compliant with their funder's policy, or if they are not funded, advised on the self-archive embargo period, after further conversation.

Turning away non-RCUK funded research

Non- RCUK funded authors also request Gold, particularly in Fully OA journals. The following authors' claims were rejected because their articles were not research output from RCUK grants.

I am a final year medical student. I am in the processing of seeking out a journal for the submission of a paper, and I have identified ... a potential place of submission. However, the journal is open access with an article-processing fee. On the journals website they state that most authors submitting from member institutions will have their charge covered by the institution, but the University of Bristol's website implies that this not be the case for UoB. I was hoping for some clarification?

I would like to publish a paper in the online Journal Phys Rev X, which is open access only and has a charge of $1300 to cover the OA publication costs. However, the work was done in house, i.e. without funding from any RCUK body. Can we still claim back these OA costs, or do we have to publish this in a non-OA journal with lower impact factor?

Those not in receipt of funds for fully OA publications are disadvantaged by the current system; their academic freedom to publish in the most appropriate journal is limited to those with a traditional subscription model. This illustrates that even with OA journals, impact factors are still a concern for authors, and it drives their submission choices.

Interpreting funder policy

The team assist with interpreting funder policy, including funders other than RCUK or Wellcome/COAF, such as the National Institute for Health Research (NIHR); authors are walked through their funder's policy and how this relates to publisher policy for specific journals. The team deal with questions from authors such as:

> *I have recently had a paper accepted by the journal Epidemiology. The work was funded by the MRC, hence I need to arrange for the paper to be Open Access. The journal have instructed be to complete a Licence-to-Publish form, and sent a link to the payment site. However I'm not clear whether I need to go down the 'green' or the 'gold' route, and whether I need to make any special arrangements with the university regarding payment. Please could you let me know what the appropriate next steps are, as this is the first time I've had to do this.*

The team give advice to eligible authors about publication routes, steering authors to the Gold route if the journal is compliant: this is RCUK's preference.

> *I know the BBSRC requires open access, but the form gives two options: "Gold open access", which mean immediate access to the final article, or "green open access" which means you can self-archive your draft copy after an embargo period… I am a bit stuck on which of these I ought to choose.*

Authors are starting to use Sherpa's Romeo and Fact services to check funder policies, but struggle to understand the information's details. This is partly because Sherpa directs the author to publisher websites and these can be difficult to understand, even for administrators, and partly because embargo periods are displayed as the longer period, which only applies when the institution has no remaining funds, or no Gold OA option is available with the publisher.

The team corrects misinterpretations, and steers the author back to the correct route for compliance with their funder policy:

> *Sorry, I didn't realise the journal that I made an OA claim for a few minutes ago was green OA compliant, so please ignore the request I just put in for OA costs.*

The response to the author clarifies the funder's policy and the route to take in future.

BBSRC has a 6-month embargo for Open Access where funds are available and there is an Open Access option offered. The 12 month compliance is only accepted by the funder where this isn't the case, so the compliant route in this instance is Gold. If you haven't yet finished the submission of your accepted manuscript, please select the RCUK prepay option with the publisher. They can add it to our account.

Prompt responses are crucial, as retrospectively obtaining Gold OA can be time consuming and complicated.

Retrospective OA

The team can arrange retrospective OA for papers but they generate more work. Smaller publishers are not always able to amend webpages and PDFs to reflect the new OA status post- publication. When an author realises their published article is not compliant with the funder's policy, they request retrospective OA:

I have recently published three papers which should probably be made gold open-access (see below). All acknowledge EPSRC, and all are in top-ranking journals, potentially usable for the next REF (or equivalent): Can we arrange this?

I was hoping you could advise me on the appropriate steps to take to make the publication outlined below open access and compliant with MRC policy. Any advice you could offer would be hugely appreciated. I'm struggling to identify the copyright terms associated with this journal. Is the green route possible here?

Non-compliant journals

The team turns down requests for funding in non-compliant journals; this is a particularly sensitive area:

I have received a publication charge form for a manuscript accepted in the American Naturalist. I would like for the paper to be Open Access, and should be covered by the block grant as I am funded by NERC. There are page charges as well as open access costs. Are we a "subscribing institution" to this journal? I need to let them know this as it affects the invoiced sum for open access.

Rejecting claims requires tact, clarification of funder policy and possible alternatives. The following response illustrates the level of detail the team provide to authors.

> *I've checked Sherpa Romeo and Sherpa Fact for this journal, and unfortunately, American Naturalist does not offer a CC-BY licence. It is not compliant with RCUK policy for Gold, which is a condition of using the block grant. We can't pay for the Gold publication costs. Also, we are unable to cover page or colour charges from the block grant. Some of our authors negotiate with the publisher to get the costs removed; in the instances where this is not possible, they have been met from departmental funds. I've looked at the publisher's policy regarding Green open access. Whilst on the surface, it seems this would be non compliant, as the self archive embargo is 12 months (for the final PDF), I note that they allow earlier deposit of the Author Accepted Manuscript if it is required by funder (NERC's policy is 6 months).*

Whilst the resolution was satisfactory, the author was keen to point out their disbelief that a journal with high symbolic capital would not be covered by the block grant, due to non-compliant licence options, exemplifying the need for greater awareness of the conditions attached to claims.

> *This is the first I have heard that not all journals are covered, and it is particularly surprising one as prestigious and broad … as American Naturalist is not included.*

This is also the case with Wellcome/COAF authors: Wellcome have the same requirement for a CC-BY licence:

> *The AHA is one of the premier publishing outlets for cardiovascular work and publications in those journals are prestigious and good for the university and REF… Are you saying that a CC-BY licence that is also non-commercial is unacceptable?*

Intervention with publishers draws attention to their non-compliant licences; the team occasionally request publishers to reconsider their licence options (see Appendix III for an example communication with a publisher regarding compliance.) OA teams are reporting non-compliance of high impact journals (and publishers) to RCUK to add weight to the requests of individual authors; The Optical Society of America's *Optics Express* is one example of a prestigious publication that is not compliant with RCUK policy by Green or Gold routes, a source of much concern for authors striving for publication in journals that increase their symbolic capital.

Post- acceptance communications

Overall, the team control the process by liaising with authors, publishers and funders about the fine details of OA policy and compliance requirements, acting as both intermediary and expert in the daily administration of the funds. The team is fully responsible for authorising payments from funders' block grants and undertakes the majority of the administration and communications required to pay APCs, but this is only the 'front end' of the process. It is also responsible for manually searching for the titles of articles to monitor compliance of each article's metadata, repeating the process regularly for each article until it is published, and tackles all communications with publishers to correct issues regarding copyright, licence, non-OA status, and non-deposit in Europe PubMed Central. This cannot be automated and it is therefore time consuming; ensuring an article is fully compliant often requires the dedicated and regular pursuit of publishers, with hours of additional administrative burden falling on the team.

Post- compliance check advocacy work

When the article is published and compliant, the team tweet the article to funders and followers through the BristolUniOA Twitter account, increasing visibility. There is a subtle level of social media promotion from the team; when authors' twitter handles are recognised, they are mentioned in the tweet. Authors are becoming more aware of altmetrics, and the team highlight the importance of this and the work undertaken when appropriate.

> *In addition to OA improving article visibility more generally, we also tweet the articles from our Twitter account, mention the funder and publisher by name, show a picture of the full title, and a link to the article. This usually gets a couple of favourites and retweets, so it all helps from the altmetrics side.*

Tweeting the article marks the final step for the team's involvement in the lifecycle of making an article OA. At this point, it has been checked for licence, status and acknowledgement compliance, and it satisfies the funders' requirements.

4.1.1. Gold and Green

Bristol's institutional policy reflects its ambition to 'maximise the global visibility and impact of its research' by encouraging all researchers to make their publications OA, but the University does not currently have an institutional fund (University of Bristol, 2015); Gold OA payments administered by the library are only available to RCUK or Wellcome/COAF funded authors. Many researchers are not funded, particularly those in the Arts or Social Sciences and Law Faculties, thus Gold charges cannot be paid for by the library: papers written by funded researchers that are not direct research output from their grant, or are ineligible for the block grant (commissioned, or not peer-reviewed papers, for example) are also ineligible. These papers need to be made OA through the Green route, or have the APC paid for by a third party (School, or authors' own funds).

The OA team supports researchers to make publications for OA through advice and guidance for both Green and Gold routes. Whilst the team is responsible for checking copyright and validating documents in the IR for Green OA, the bulk of the work currently undertaken is advising researchers about policy compliance and processing Gold APCs payments.

HEFCE's post- 2014 policy will change this ratio. The policy states REF eligible submissions must have been deposited as OA within three months of acceptance (subject to embargo). This is generating more query work with authors.

> *I've got an article about to come out … I've probably left it very late indeed to get in touch -- apologies. I'm at the stage of signing the manuscript licence, again *soon*, where I see I can choose between a standard licence (free), an Oxford Open "CC-BY" licence, which would cost £1,750, and other open access licences costing the same. This research isn't RCUK-funded, by the way, but I do envisage it as an "output" for the next REF. The Sherpa/Romeo website seems to suggest that I can upload a 'post-print'- after a 2-year embargo (presumably "Green" rather than "Gold" OA). Could you give me some advice as to what to go for now (i.e. whether the university would pay for the "gold" licence)? Again, sorry to be so very last-minute.*

The uncertainty regarding future RCUK block grants -particularly after the end of the five-year transition period in 2018 – and the impending move towards a University mandate for self-archive of research publications will alter the balance

of Green/Gold work currently undertaken. Authors are becoming increasingly aware of the implications of not self-archiving their papers, and the mandate to ensure authors deposit their research output in the institutional repository will intensify this. The team, and that of many other HEIs, is expanding in anticipation of the future increase in their Green validation workload.

4.1.2. Difficulties

There is a tension between the institution's 2014 policy advocating Green 'as a means to achieve its goal of research-wide Open Access regardless of career level or funder' (University of Bristol, 2015), which places Green OA at the core of its institutional policy, and RCUK's 'preference for immediate Open Access with the maximum opportunity for re-use' through Gold and APC payments (RCUK, 2013).

Problems arise from this contradiction. Two different messages need to be conveyed to researchers – the institutional policy for Green OA, and the Gold policy for RCUK and Wellcome funded authors. Bristol has approached this by softening the Green message, now opting for communications that 'suggest Green as the cultural norm within a mixed economy' (University of Bristol, 2014) whilst undertaking advocacy work, targeting the RCUK message to Schools with high levels of RCUK funding. The majority of Wellcome funded authors understand their funder's requirements through Bristol's Wellcome block grant, which commenced in 2007. Many authors are in the Medical Faculties are joint RCUK/Wellcome funded; there are high levels of awareness of the availability of and requirements for using the RCUK block grant with these researchers. Awareness is not as widespread in other Faculties, and there is strong recognition that work needs to be done in this area.

More broadly, interpreting and comparing institutional, RCUK, Wellcome and HEFCE policies is a complicated and laborious task, especially for those unfamiliar with the terrain of OA and publishing. Clear and accurate information from the team is paramount in this area, but it involves query work and detailed

communications to individuals, which is time consuming. Glasgow's recent publication on their OA service also highlights the complexity of this area, stating:

> *it is confusing enough to those of us who work with it on a daily basis. It is deeply confusing to academics who may only engage with it once in a while (Ashworth, McCutcheon and Roy, 2014).*

This can be tackled through greater advocacy and engagement with researchers and senior academic staff; outreach activities provide opportunities to give clear written and oral guidance, for example at School meetings, or training sessions. Promoting a more embedded and holistic support for researchers has required a broad rethink of the research support offered by the library.

4.1.3. Research support

A recent library restructure provided a chance to renovate research support provision; OA is now part of the new Research Engagement team, with three dedicated Research Engagement Librarians tasked with advocacy work at Faculty and School level. This change will assist in communicating the OA message by providing a direct link between the library and researchers, and other internal stakeholders. The team has an outward facing approach, and is developing a suite of advocacy work to include library led training on depositing articles in the IR, attending School and Faculty meetings in specific research intensive areas (e.g. Social and Community Medicine; Engineering), and undertaking outreach work with clinical staff based at hospitals. Stronger links are being built with publishers on behalf of researchers, particularly relating to the use of subscription 'offset' agreements and publisher vouchers.

From August 2015, the Research Engagement team will join with the Research Data Service in a broader Research Support team. A recent headline report to the Russell Group states:

> *[a]cademic freedom is a much cherished principle at Bristol, and this means culture change best achieved in partnership with our academic community and is rarely successful when approached simplistically from the compliance angle' (University of Bristol, ND).*

The new team aims to strengthen research support through visibility, advocacy, cross-divisional collaboration and the provision of better advice, reducing the emphasis on 'what you need to do' and changing it to 'what we can do for you'.

The proposed changes will bolster the support currently offered by the OA team; more importantly, greater collaboration and inter-team working provides opportunities for pockets of individual expertise to translate into wider team understanding and better promotion of each other's agendas.

4.2. Are procedures for distributing funds, making payments for articles and monitoring use and compliance of the RCUK block grant effective and efficient?

Bristol operates a 'first come first served' approach with the RCUK (and Wellcome) block grants, as is the case with many institutions (RIN, 2013). In RCUK Years One and Two, there have been no issues with this, as funds are ample. RCUK (2015b) explain how the block grant distribution has been calculated using the amount of 'direct labour funding' received by institutions during the years 2010 – 2012, but note that it is 'unevenly distributed' with 30 institutions in receipt of 80% of the funding. Bristol is in a fortunate position in relation to many of its peers, and receives the highest block grant out of the GW4 group (Bristol, Bath, Cardiff and Exeter Universities).

4.2.1 By Faculty, and by funder

From data produced in administering the fund, uneven distribution is not only prevalent at institutional level, but at Faculty, and funder level. Of the 221 RCUK articles paid for in 2014, the Science Faculty has the largest share, at 88 articles (40.88% of the total spend) whilst the Arts, and Social Sciences and Law Faculties only published five articles each (2.24% and 2.14% respectively); see Table 3 for percentages, and Table 4 for total cost.

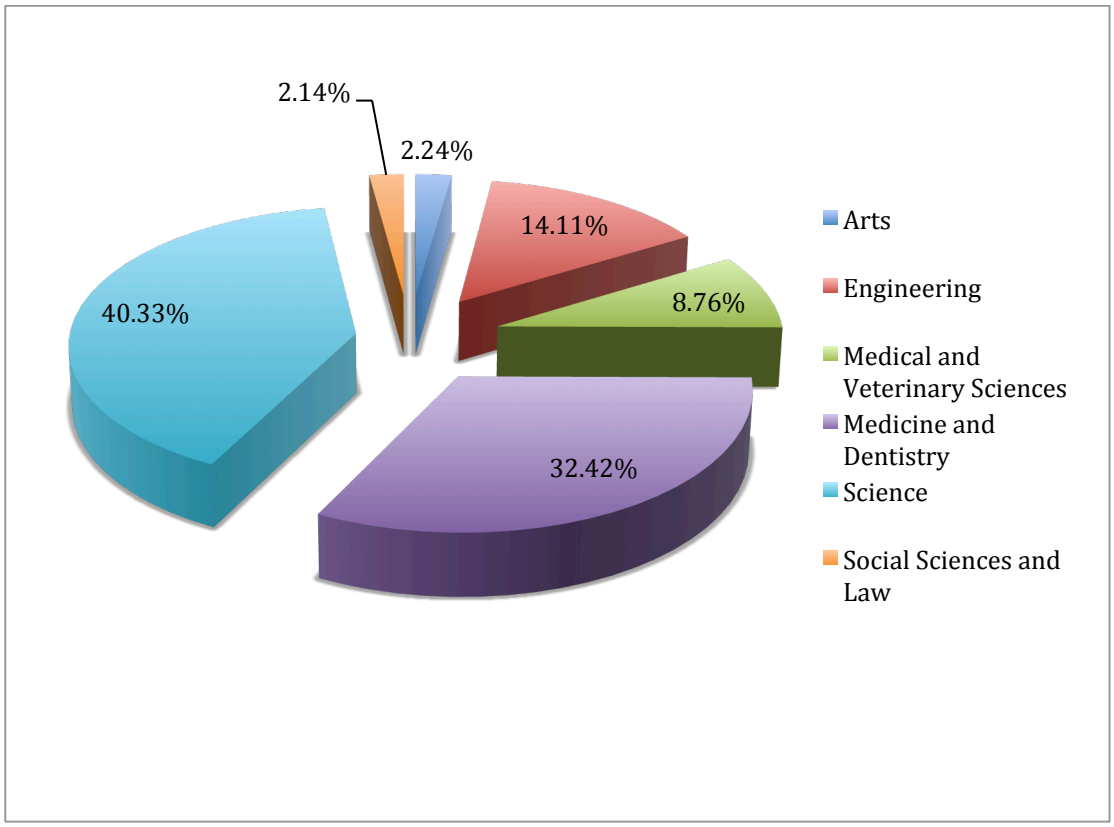

Table 3. Percentage of spend by Faculty, JISC 2014.

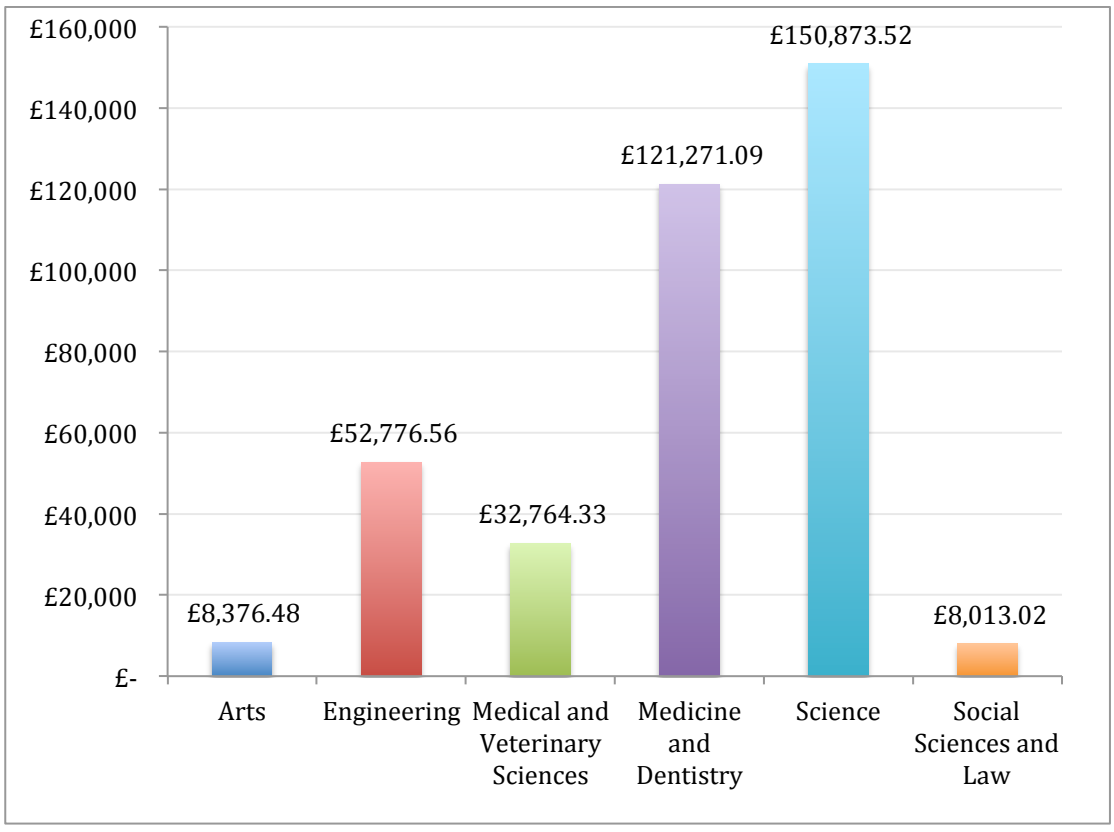

Table 4. Cost of spend by Faculty, JISC 2014.

The average cost of APCs differs from Faculty to Faculty. The highest average Faculty APC cost is Medicine and Dentistry, where 68 articles were published at an average of £1,783.40 each (32.42% of the total spend), whilst the lowest cost is at Engineering, with 34 articles at an average of £1,552 each (14.11% of the total spend); see Table 5 for average article cost by Faculty, and Appendix IV for breakdown of spend by Faculty and publisher type.

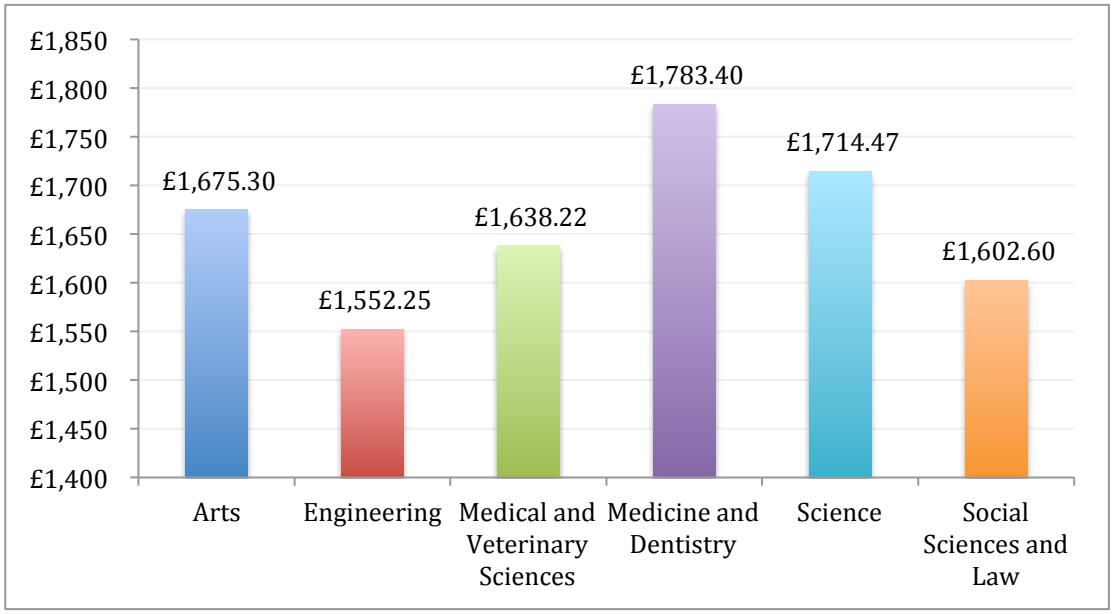

Table 5. Average article cost by Faculty, JISC 2014.

By funder, the Medical Research Council (MRC) are the first or sole named funder in 69 (31.22%) articles, with the Engineering and Physical Sciences Research Council (EPSRC) coming second with 56 (25.34%) articles; the Natural Environment Research Council (NERC) are third with 45 (20.36%). The Biotechnology and Biological Sciences Research Council (BBSRC) were named in 35 papers (15.84%), however the Councils for Economic and Social Research (ESRC) and Arts and Humanities Research (AHRC) are only acknowledged on 15 papers – 12 for ESRC, and three for AHRC, totalling 6.79% between them. The Science and Technologies Facilities Council (STFC) were not named on any paper in 2014. See Table 6 for distribution by Research Council.

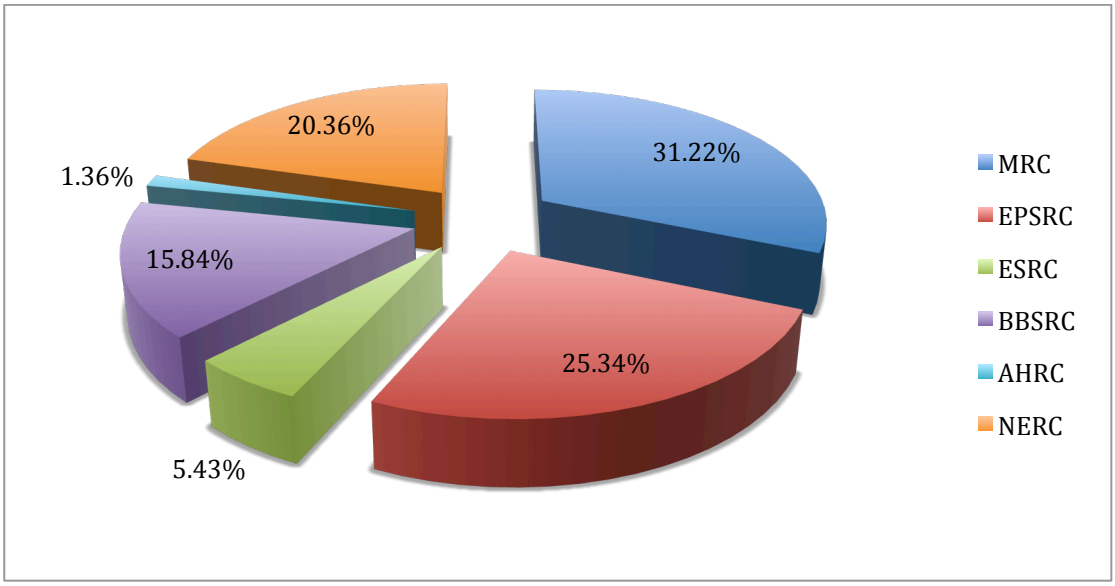

Table 6. Distribution of spend by research council (first or sole named funder), JISC 2014.

4.2.2. Difficulties with allocating payment distribution.

One of the principle challenges with RCUK's policy is ensuring fair and adequate distribution between researchers and Faculties with incongruent discipline specific cultural practices, for example, favouring publications as articles rather than monographs, or greater tendencies of specific Schools for publishing in high impact (and invariably higher cost) journals. RCUK do not provide specific guidance on this, and there is a lack of published research offering solutions from libraries who administer the fund – though in a JISC pilot study, Leeds University 'notionally allocated' funds to each Faculty in an attempt to provide more granular monitoring (JISC APC Pilot, ND). Many libraries operate a 'first come first served' approach. Conversations regarding the finer points of administering the funds have commenced on mailing lists recently, invariably as a consequence of funds dwindling towards the end of the RCUK year (Cambridge and Bath have mailed the UK Council of Research Repositories mailing list concerning this; Oxford also highlight this in the JISC APC Pilot, ND).

RCUK have recognised there is a need to be more explicit in their communications regarding the administration of the fund, and will address this in future policy updates.

4.3. How does Bristol make payments for Open Access articles?

Bristol uses a combination of prepay schemes and publisher invoices to pay APCs. The majority of invoices are publisher generated and payable to them directly, though occasionally a publisher chooses an intermediary service to collect payments on their behalf (Cambridge University Press and American Institute of Physics use RightsLink).

4.3.1. Who received payments, and how?

In 2014, Bristol paid for 136 of its 221 RCUK articles by prepay scheme (61.54%) and 85 of its articles by invoice (38.46%). This ratio reflects the increase in the number of prepay schemes available as compared with the larger data set of RCUK Year One and Two; see table seven for prepay/

In RCUK Year One, 121 of 226 articles (53.54%) were paid through prepay schemes and 105 (46.46%) by invoice. Not all funders named on papers in Year One were declared at the time of submitting claim forms, thus Wellcome were not charged for a number of articles; as RCUK acknowledgement on Wellcome funded claims also occurred, the reverse also applied. To increase the accuracy of fund deductions, more detailed checks are now made at the time of application; experience has shown that research from certain Schools and authors is more likely to be dual funded. In RCUK Year Two, these administrative changes impact on the data.

RCUK only funded research totals 206 articles; 132 (64.08%) paid through prepay schemes, and 74 (35.92%) by invoice. Adding split Wellcome/Charity Open Access Fund (COAF) payments results in 31 additional articles with an RCUK contribution, with 152 (64.14%) articles paid through prepay schemes, and 84 (35.44%) paid by invoice; see Table 7 for the prepay/invoice split.

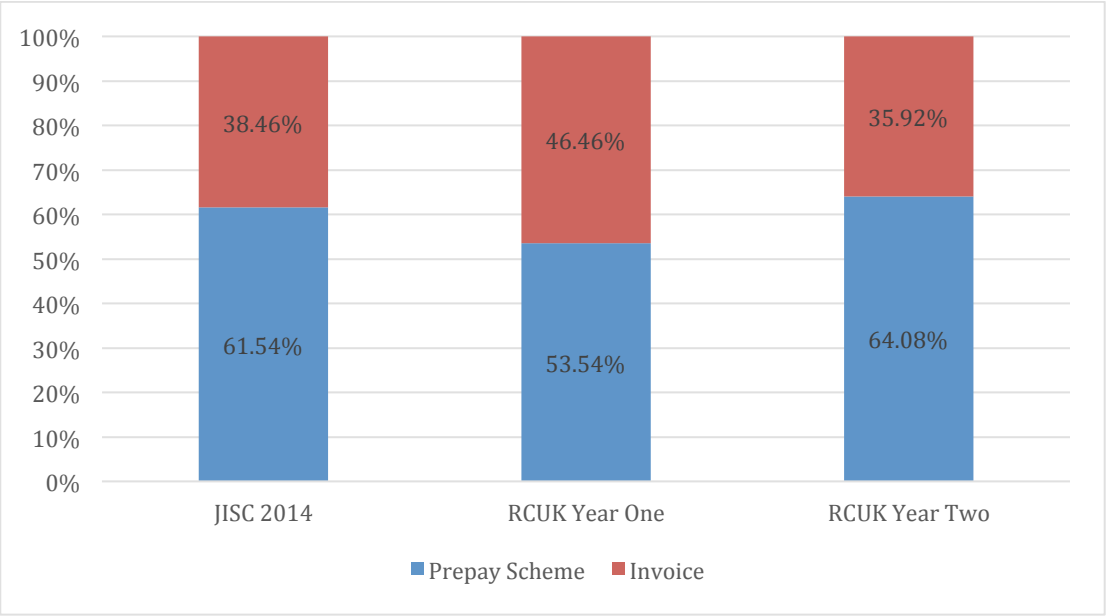

Table 7: Prepay/invoice ratio for JISC 2014, RCUK Year One and RCUK YearTwo.

The ratio of RCUK to Wellcome or Wellcome/COAF funding as a percentage of paid APCs also remains stable. In 2014, 311 APCs were paid, of which 221 (70.06%) were RCUK, and 90 (28.94%) were Wellcome/COAF funded.

In RCUK Year One, 315 articles were paid; RCUK paid 226 (71.75%)APCs, and Wellcome paid 89 (28.25%). However figures for RCUK Year Two reflect the administrative changes; 206 of the 287 APCs were RCUK funded (71.78%), 50 (17.42%) were Wellcome/COAF funded, with 31 APCs (10.08%) processed by splitting each APC in a 50/50 ratio between the two block grants. Assuming dual funded research claims against each grant would have balanced out (as assumed in previous years) yields 215 (74.91%) RCUK APCs and 66 (22.99%) Wellcome/COAF APCs, which broadly compares to the other data sets; see Table 8 for RCUK and Wellcome/COAF administration split.

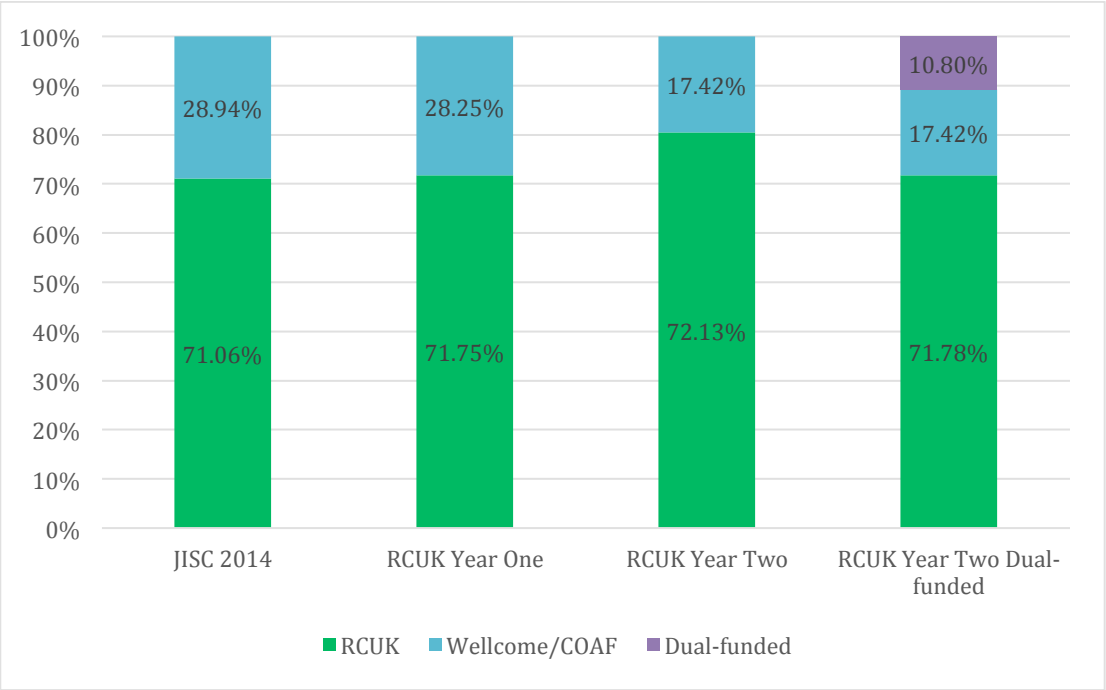

Table 8. RCUK and Wellcome/COAF split for RCUK Year Two.

Wellcome Trust work is an important consideration; whilst the OA team's salaries are currently deducted from the RCUK grant to support policy, part of their work is administering Wellcome's fund and administering split payments between the grant codes. The team uses RCUK funded prepay schemes wherever possible with joint funded authors to benefit from faster administration and discounts, where applicable; money is transferred between the two block grants to balance the funds. Wellcome/COAF funded authors are unable to use prepay schemes and submit invoices, thus increasing the time spent administering their OA claims, time which is ultimately paid for by RCUK. Whilst the article ratio is less than a third, the administrative time spent is disproportionate, as invoices involve more processing time.

The more interesting statistic is not 'how do Bristol pay for APCs' but 'whom are they paying?' Research recently published by RCUK (2015b) reports that in terms of the number of RCUK papers produced, the top five publishers by volume account for almost 56.9% of papers, and the top ten publishers account for 73.6%. Elsevier and Wiley account for 40.8%. Fully OA publishers PLoS (#3), BioMed Central (#7) and Copernicus (#17) account for 12.5% collectively.

Bristol's top five and top ten publishers by volume mostly correspond with RCUK, and account for 59.28% and 75.57% of the APCs (Table 9), which compares to RCUK's figures. Elsevier and Wiley account for 43.89%: (table 10), which is higher than RCUK (Table 11), but in terms of the cost, the two publishers received 45.69% of the total spend, despite prepay scheme discounts.

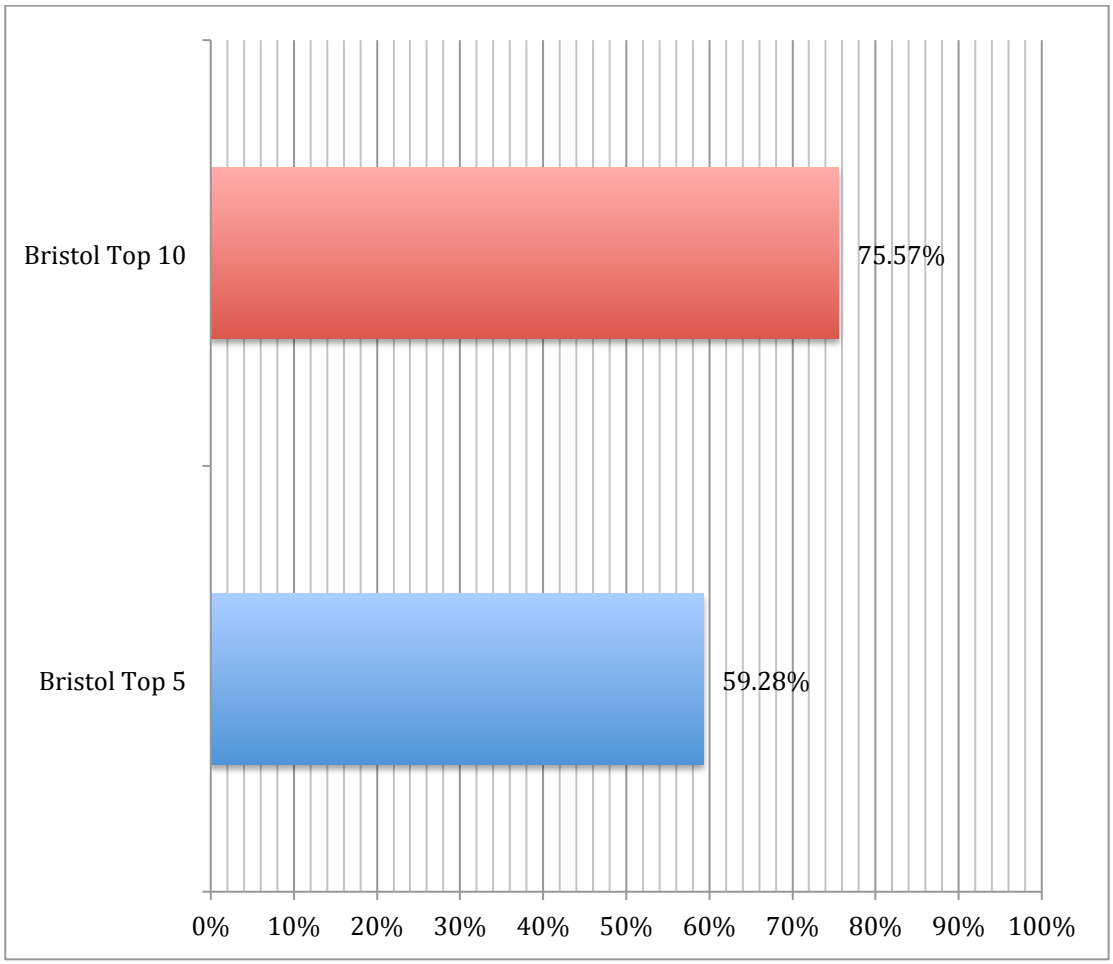

Table 9: University of Bristol's Top 10 and Top 5 publishers' share of APCs for JISC 2014.

This reflects the higher cost of hybrid publications, particularly those with high impact factors. A recent APC query with Wiley regarding the journal *Small* illustrates how the symbolic capital of impact factors continues to have an effect on the material value of publications, reinforcing exclusivity and prestige (Eve, 2014).

> *Due to its increase in Impact Factor, Small's OnlineOpen/Open Access fee has been increased [from £2000] to £2800 GBP.*

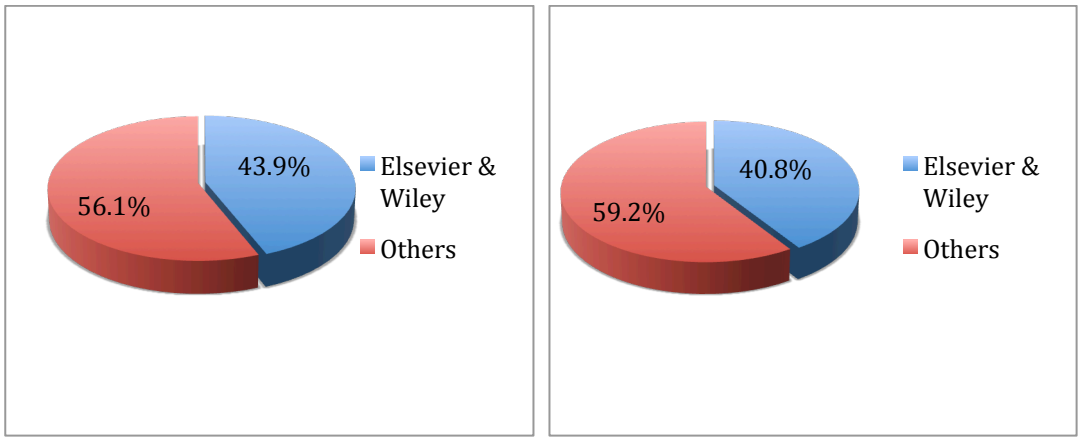

Table 10: Bristol – Elsevier and Wiley share of articles published (JISC 2014);
Table 11: RCUK – Elsevier and Wiley share of articles published (RCUK Year One).

In the top ten, fully OA publishers PLoS (#3), BioMed Central (#5) and Copernicus (#10) account for 11.3% (see Table 12). In 2014, only 51 of the 221 articles published were in fully OA journals offered by OA and traditional publishers. Appendix V provides a full list of publishers, journals and cost, by Faculty and School.

Bristol has prepay schemes with four of its top ten publishers (Elsevier, Wiley, Springer and BioMed Central), and will shortly initiate a prepay scheme with a fifth (PLoS). Using 2014's data as a gauge, 67.42% of APCs will be administered through prepay schemes, with discounts ranging from 0-75%. In 2014, the average prepay scheme APC was £1,492.47, compared to the average invoiced article's £1,702.44. It is clear there are benefits to using prepay schemes in terms of discounts from publishers, and in time and effort taken to administer APC payments.

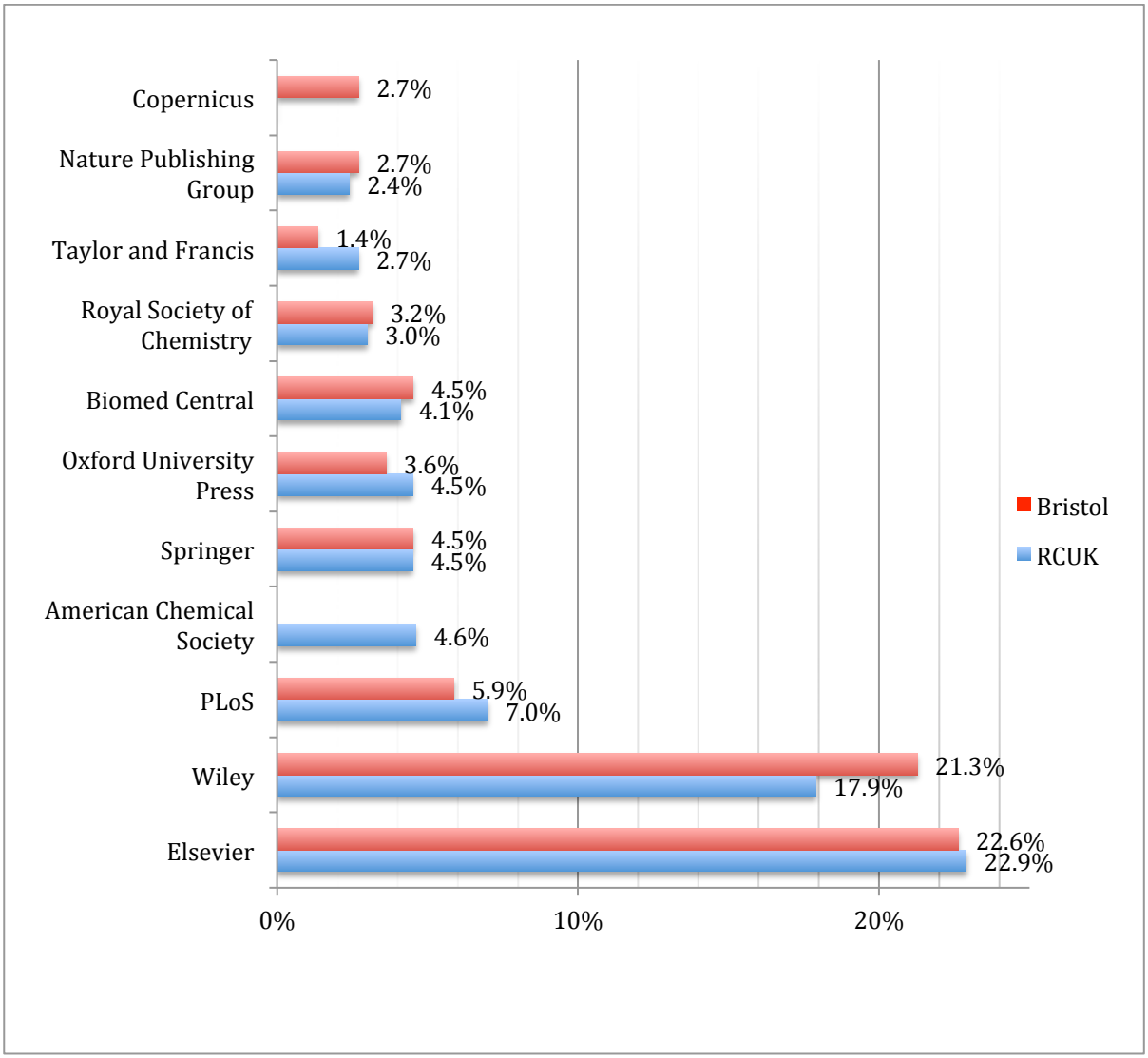

Table 12: RCUK and University of Bristol OA publisher comparison, by percentage of articles published.

4.3.2. Prepay Schemes or Invoices?

Whilst discounts vary, there is a definite advantage regarding the time element of prepay schemes. Ashworth et al (2014) sum up the difficulty of managing APCs, pointing out:

> *[T]he library is stepping into the middle of the publisher-author relationship and attempting to be an intermediary for one part of that relationship – payment.*

Not all publishers are equipped to deal with the change in the exclusive relationship they have with the author. Those that are, provide a mechanism to promote and embrace the publisher-library-author triad delivered by APC payments, and generally, the mechanism is a prepay scheme.

Agreeing to pay an APC from a prepay scheme usually requires authorisation. Some schemes (BioMed Central and BMJ, for example) require the author to contact the team for a code to allow the team to check the author's eligibility, and the publication's compliance. Wiley and Springer provide an email notification of an article's acceptance; Wiley provide a web-based app to check eligibility from the metadata and authorise payment; Springer provide a PDF of the article for acknowledgements and affiliations to be checked on the paper, and require confirmation. Once the team has confirmed an article is eligible for deduction, there is no further need for the author to be involved in the payment element of the process. Prepay schemes remove factors outside of the team's control, root the payment firmly in the administration process, and provide a direct link to a named contact at the publisher; this allows stronger relationships to be built and a greater understanding of each other's workflows.

Conversely, invoices are sent to the author and forwarded to the team to raise a purchase order and send to finance. Invoices are outside of the team's influence. Authors often need to be pursued for invoices, and once obtained, processing time can cause delays to payment and publication; purchasing orders require authorisation, and the University operates with standard thirty day payment terms, irrespective of whether the publisher requires payment on receipt. Additional delays arise when publishers are new suppliers or change addresses; supplier changes are manually input by the finance office, and these factors cannot be established until the invoice is with the team. Collaborative papers including other UK institutions compound the issue, and require tactful investigations to establish if Bristol holds the RCUK grant, or to ascertain if the bulk of the work was undertaken at the University; the author needs to provide an invoice addressed to the University of Bristol, including those overseas. Publishers chase authors for payment, even if the team has received the invoice directly; this makes authors anxious regarding their publication, and in turn, generates more communications. In cases where a publisher has not received payment, proof is required; this is

only available to finance team members, thus the team request it from the finance office. Obtaining proof can take a week or more, involves more work and delays publication.

4.4. Summary

This chapter has detailed the complexity of administering the RCUK block grant, and the wider issues of OA in relation to funders, publisher policies, and institutional, HEFCE and RCUK policies. The following chapter will conclude the research, and discuss possible areas where processes can be improved.

5. Conclusions

This chapter concludes the research '*The University of Bristol and Open Access: How are researchers supported post Finch Report?'* It will address the research questions, evaluate the utility of mixed methods research, and provide recommendations for improvements to the service, and future research.

5.1. Research Questions

This section considers the findings; the research questions are summarised and discussed in turn.

5.1.2. Does the level and type of support offered by the library meet the needs of researchers complying with RCUK's mandate to publish research output as Open Access?

This research adequately demonstrates the level of support the library gives to researchers learning compliance requirements of RCUK's mandate through ethnographic evidence. The OA team guides authors through compliance, funder policy, and provides highly detailed, case-specific advice about articles; researchers are grateful for the expert advice received. Feedback is positive, showing the support meets the needs of researchers. When problems occur, the frustrations felt by researchers are not directed at the team, but towards publishers, or funder compliance requirements.

The library supports researchers in the following areas:

- Establishing if a claim is eligible;
- Advising non-RCUK funded researchers;
- Interpreting funder policy;
- Retrospectively obtaining OA;
- Advice and communications about non-compliant journals;

- Post- acceptance communications with publishers, funders and authors;
- Compliance checking;
- Post- compliance check advocacy work.

This covers a broad range of administrative tasks. The library undertakes extra background work to secure an article's compliant publication, and to make arrangements for payment, removing the burden on the author.

5.1.3. Are procedures for distributing funds, making payments for articles and monitoring use and compliance of the RCUK block grant effective and efficient?

Having examined the data on fund distribution, APC payments and compliance, this research indicates there are areas requiring work to ensure fairer distribution and greater efficiencies.

Faculties and funders

There is an unequal distribution of APCs across Faculties, and funders. A clear steer from RCUK about Research Councils' ratio of research funding would allow the block grant to be roughly apportioned and a percentage of funds earmarked. MRC research accounts for almost one third of the 2014 spend; details on MRC's proportion of RCUK's budget would allow a statistical comparison. Statistics on AHRC's and ESRC's budgets would allow a better match to the block grant; knowledge of STFC's budget may explain why they were not named in any papers in 2014. More detail would allow a targeted advocacy approach to Schools likely to hold specific Research Council grants, but it foregrounds another issue; the deficit of centralised research grant information at the University.

This impacts on monitoring Green OA compliance substantially. RCUK (2015) note the difficulties institutions have faced tracking papers; it is likely to mandate the use of Open Researcher and Contributor IDs (ORCID) in grant applications and is encouraging publishers integrate ORCID ids into their systems. Bristol is investigating mandating ORCID for use in its CRIS.

Payment

Current procedures ensure prompt handling of claims with payments made as soon as possible. Bristol benefits from prepay scheme use, but administering individual invoices is inefficient and adds to administrator and author frustration. There is scope for an intermediary service, and RIN (2013) are correct to suggest this warrants investigation. Publication and payment workflows vary, and once the team agree an APC, articles must be published quickly, even if payments have not cleared.

Compliance

There is an inherent difficulty with compliance; authors select publications before checking OA options so many do not realise Gold is the only compliant route. If the author has self-archived their published paper, system limitations make searching the CRIS for Green articles laborious. HEFCE's policy necessitates an institutional mandate; this will raise OA awareness with authors, thus individual and institutional compliance can be achieved with RCUK's mandate more easily.

5.3. Evaluation

The field notes and ethnographic evidence contextualise the statistical data encountered through administration and show the support provided, the effort required to steer authors to compliant routes, and areas where different policies and drivers overlap and misalign, causing confusion. The process of email content analysis was time consuming, but field notes offered guidance for repeatedly encountered themes, with direct quotes expanding the findings. Another method would not provide this level of context; this complemented the data set, and added depth. One or two end-to-end case studies would have bolstered the research, but size limitations and risk to authors at a sensitive time precluded this. Future research may demand case studies at author, rather than institutional level, to qualify authors' challenges, rather than administrators.

5.4. Recommendations for improving processes

Identifying how to improve processes is tricky, as many of the problems faced by administrators stem from limitations outside of their control. The team can improve processes in three areas, though not all of these are within the team's influence.

5.4.1. Communications

Advocacy is a growth area for the team, and the new Research Engagement roles will provide greater flexibility to undertake advocacy work. The OA team will augment their work by establishing a link between library staff at the grass roots of administering the block grant, and library staff embedded in the Faculties. Recent team communications detail areas requiring advocacy- discipline specific issues for understanding compliance; results of internal audits from departments; the need to include requirements for compliance, including the mandate for data availability statements where applicable, in training and promotional materials.

The Library will shortly overhaul and redesign its website, including the OA pages. The current site is large and the information overly detailed; it uses a different content management system to the rest of the University, and looks out-dated. Upgrades will provide an opportunity to rethink the type of information required, and its presentation. Strong, clear communications will make processes more efficient by increasing understanding, thus decreasing simple queries; an FAQ section will provide details on funders' policies, the post- 2014 REF and the University's mandate.

5.4.2. Administering the fund

Improvements to administering the block grant are more complicated. Monitoring payments, checking compliance and interpreting and adding data are labour intensive activities that require careful attention to detail. Bristol uses a complex Excel spreadsheet to administer payments and store information about RCUK Green OA. The spreadsheet reflects different aspects of the data, providing pivot

tables and statistics for compliance and monitoring activities for funders, funds, prepay accounts and internal stakeholders. The daily activities and workflow of the team are completely dependent on the spreadsheet; this is the case with almost all OA teams, as research by RIN (2013) reports the vast majority of institutions manage funds through Excel.

Processes need to be flexible, efficient and user-friendly with guaranteed stability to support monitoring and reporting; these are not maximised by administering the fund in Excel. The team's expansion means concurrent users need to enter, amend, edit, save and retrieve data without compromising the integrity of it as a whole; this flexibility is not available with a spreadsheet. Administering claims through Excel results in an unwieldy and labour-intensive workflow; obtaining information is manageable through filtering, but entering data requires manually cutting and pasting from claim forms submitted by the author. The stability and reliability of storing the data in one place is an additional factor. The spreadsheet loses crucial formatting and quits, resulting in corrupted or lost data; both of these issues have increased in line with the volume of data held.

Having identified this weakness, the team is converting from Excel to Access. This has taken a considerable amount of work and required learning new software and skills, but there are high expectations that Access will speed up the administration of processing claims, providing a more stable platform for the volume of work. There has been an 'up-skilling' of the OA team, but this has potential wider benefits for the library; teams with similar workflows and requirements can draw on the new skills and expertise in databases; for example, teams in purchasing and document supply.

5.4.3. External limitations

Developing rules of thumb for complicated requests can be problematic. Deciding how and who should make a payment for multiple funder or multiple institution papers requires a detailed discussion with the author and other OA teams. RCUK's 'light touch' policy guidance promotes flexibility, but collaborating author's institutions can have different interpretations. However, evidence solicited from

HEIs for the end of Year One report recognises that lack of clarity from RCUK regarding fine policy details increases the administrative effort of managing the fund, particularly pertaining to the data required by institutions when monitoring spend, compliance and reporting. RCUK have suggested a policy revision to clarify these issues.

5.5. Implications of the research

OA teams have to reconcile compliance and administration with academic freedom; this dichotomy mirrors the tensions between stakeholders detailed in the Finch report. This research makes clear that as researchers most often contact the OA team after their chosen journal's acceptance mail, and this choice is most often driven by impact factors and the journal's prestige, the desire to publish in journals that offer high symbolic capital remains. RCUK acknowledge there 'is little evidence to suggest that the introduction of the RCUK policy had much of an impact on author behaviour' as authors still prefer the journals they have always published in (RCUK 2015). This is troublesome for administrators; higher impact journals have higher APCs, and there is author disappointment when there are no funds for publications accepted in non-compliant journals. RCUK acknowledge they need to provide better communications at researcher rather than institutional level to promote the agenda and bring greater clarity, thus reducing the burden on administrators.

The principal challenges faced by RCUK authors are tensions between their choice of publication, the policy, and the incentive for publishers to provide options that comply. There is an inevitable lag whilst publishers 'catch up' with RCUK's policy requirements for paying APCs, though this issue is now primarily demonstrated at smaller publishers and society journals. If there is no compliant route the author has the dilemma of choosing to publish for impact and symbolic capital in a non-compliant but prestigious journal, or adding a delay to its publication by withdrawing and restarting the submission process at a lower impact journal that maximises accessibility, but with fewer peers reading it

because of author reading strategies (Brembs, 2013). Direct communications by RCUK will assist in changing the culture at the root.

5.6. Recommendations for further research

This research emphasises that authors have already decided upon a publication before considering Gold/Green OA and compliance; furthermore, authors are divorced from the costs of publishing, and unaware of the financial implications of their publication choices; this is exacerbated by centrally administering OA funds. There is a pressing need for detailed ethnographic research into the drivers for journal choice in scholarly publishing, to analyse potential areas where author behaviour can change and facilitate mandate compliance. This is crucial for Green OA, as whilst Bristol has adequate funds now, the grant and the balance of Gold/Green will change in the future; as 62 of the UK's 107 HEIs receive a scant 10% of the money (RCUK 2015), this is of extreme importance to lesser-funded institutions. Of particular benefit would be an examination of journal impact factors in the context of each discipline.

Authors without funding are disadvantaged, and it is worth canvassing the appetite for Gold OA in non- STEM disciplines with less funding and different publication cultures. The driver of funder compliance is immaterial if there is no funder, thus the potential for a two-tier Gold/Green OA looms in the future for HASS authors, who may be forced to self-archive lesser versions of papers with long embargo periods. An examination of the significance of Gold publications in specific disciplines would evaluate the need and rationale for Gold OA, establish if libraries should be writing business cases for institutional funds to redress the disparity, and ascertain if the block grant should also contain monographs (see Crossick's 2015 report for more in depth explanation).

5.7. Summary

This research has achieved its aim of examining how the University of Bristol supports researchers post Finch report. Through a combination of qualitative and quantitative data, it has established the difficulty for authors to understand policy and achieve compliance, demonstrated the need for and value of library support, and evidenced the complexity of administering the fund. Whilst RCUK's policy and the philosophy of OA are ostensibly straightforward, entrenched cultural practices and conflicting stakeholder agendas impact significantly on their successful realisation, specifically regarding the perceived symbolic capital driving journal choice. As Suber (2012) articulates, the obstacles are 'cultural,' and the practices ingrained. If this remains unaddressed, OA will struggle to pose a substantive challenge to the dominant publishing model. This research directs future investigations, establishing a conduit for reasoned discussion that targets this culture at its foundation.

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7. Appendices

Appendix I. Sample letter to author explaining Green and Gold OA, and the University's CRIS, Pure.

Dear [author name],

There are two areas to your question, depending on whether you are adding documents to your research output profile on Pure, as you were here, or whether you are self-archiving for Green Open Access compliance for RCUK or Wellcome funded research. This document was RCUK funded so has a foot in both camps, so to speak. It's a tricky area to navigate, so I will try and explain it as clearly as I can!

There are variations between terms used by Pure and the publishers; each publisher has different terminology for the versions produced in each stage from manuscript submission, through peer-review, to the final 'Version of Record' as it appears in a journal. I often use this link to try and understand their terminology, though I appreciate you are more familiar with the workflow than I am.

Pure can be set as three things. I've matched up the Pure and publishers terms for you, and where RCUK fits in.

Preprint, usually an early version, most the submitted manuscript, before any peer-review or typesetting has taken place, is known by many publishers as the Submitted Manuscript.

Author final version (post print), the post peer-review but before typesetting, formatting and stylistic amendments, known by many publishers as the Author Accepted Manuscript, and what RCUK term the Accepted Manuscript and require for self-archiving Green route Open Access compliance.

Publisher Final version, which is usually PDF of the published article as it appears in the journal, often known as the Version of Record. For example, a Gold Open Access article would have a CC-BY licence, usually be 'Copyright the Authors', and can be deposited as PDF.

Any of these can be deposited within copyright in Pure, depending on the Transfer of Copyright or Licence to Publish signed by the author, the publisher's restriction on reuse, the specific restrictions of the title, or if Gold Open Access has been paid for. Policy can always be checked at http://www.sherpa.ac.uk/romeo/search.php.

For this document you chose 'Preprint' at Pure, which would suggest it was the submitted manuscript, with no peer-review amendments. The title allows you to archive a preprint with no restrictions, but the terminology is confusing so records are copyright checked to ensure it is the right version. The DOI was used to check if your 'preprint' was the submitted manuscript, or the accepted manuscript, which highlighted it was RCUK funded. This requires a deposit of the accepted manuscript, after peer-review corrections, but before any typesetting and stylistic publisher edits have been made. Essentially, the content has to be the same as the final published version.

If you can add the Author Accepted Manuscript, you will have the peer-reviewed document in Pure, and once the embargo period has elapsed, your final published research will be publicly available, and therefore RCUK compliant.

I hope this has helped shed some light on it. If you want any further clarification, or want advice on self-archiving your funded research output, please don't hesitate to contact me.

Regards

Kirsty

Appendix II. Consent letter to participants.

Dear [author name],

I am an Open Access administrator at the University of Bristol. I am currently writing an Information and Library Management M.Sc. dissertation on the subject of the University of Bristol's Open Access support for researchers post-Finch report.

I have used an ethnographic approach to understand and explain my research questions, which has involved extensive fieldwork. I have analysed communications to the Open Access team, and have identified an email you have written as a good example.

I would like to use your email as a quote to exemplify the communications we receive, specifically to highlight the problems faced by authors and Open Access administrators in promoting the Open Access agenda with limitations on eligibility to our funds, and understanding eligibility and funder compliance. Your quote will be anonymous, as the purpose is to exemplify the nature of the queries received, rather than to highlight specific individual authors.

I am seeking permission to use the exact text specified below in my dissertation:

[quote]

This dissertation will be submitted to the University of the West of England as my final module, and will not be published in any other form. The University of the West of England does not require MSc dissertations to be self-archived in the Institutional Repository.

Any information linking you to the text held by me personally will be securely disposed of once the dissertation is submitted in print and digital form.

I would be grateful if you could give consent by email if this is acceptable to you. This will be kept securely until the M.Sc. is complete, at which time it will be destroyed. You may, of course, choose to decline this request, or to withdraw permission at any time.

If I do not receive a reply by the 21/04/2015, I will assume this is acceptable, and use the anonymous quote in my dissertation.

Kind regards

Kirsty

Appendix III. Sample communication regarding the specifics of compliance with funders' policies, and retrospective OA.

Dear [publisher contact]

Thank you for contacting us. It is timely, as I was going to contact you this week regarding a Wellcome trust funded article one of our authors published with you last year in [journal omitted]. I administer the RCUK and Wellcome funds here at Bristol, and as such, I spend all day monitoring compliance for the funders. Apologies in advance for the length of this email, but I wanted to point out the finer details of the policy to you, to ensure there is understanding from both sides about what is offered … and required by the funders.

My author [name omitted] has had an end of grant compliance report for their published articles, and one wasn't published as OA (this affects the grant, as some will be withheld)…

I was looking at the options available to authors as a result of this, and I am concerned about some of the policy statements on your website, which states '… journals comply with the RCUK, NIH, Wellcome Trust and other funding agency mandates for Open Access publication of work they support.' These are the issues that we have.

1. Green option:

For Green self archive, your website states:

Post-print

Author final submitted version (post peer-review but pre-copy editing and typesetting):

• Embargoed for 12 months post-publication;

The green option doesn't comply with 5 of the 7 research councils. Only ESRC and AHRC have a 12 month embargo. MRC, BBSRC, EPSRC, STFC and NERC all require six months or less. I appreciate you may not often come across

multiple funder articles which have the shorter embargo periods, as many of your funded articles will likely be ESRC funded, but we often see dual funded authors here, particularly at Social and Community Medicine, and Experimental Psychology. The green option also doesn't comply with Wellcome's 6 month self archive policy, which states:

'If the journal allows it, you can comply with the open access policies of the partner funders by self-archiving a final author manuscript version of your paper in Europe PMC, as long as it is freely available no longer than six months of the date of publication. If you self-archive, no APC is charged and no call will be made on COAF.'

2. Gold option

Your website has the following information:

'Gold Open Access Publishing (making articles freely available to the reader under a choice of CC-BY licence) is also available upon payment of an Article Processing Charge of £1,500.'

and in the FAQ,

'If I go for Gold OA, can I choose which licence is applied to my work? Yes. You can see the licences to choose from at http://creativecommons.org/licenses/. We recommend the CC BY-NC licence, which lets others remix, tweak, and build upon your work non-commercially, and although their new works must also acknowledge you and be non-commercial, they don't have to license their derivative works on the same terms. You may however be mandated by your funding body to apply a specific licence – do check!'

With regards to the Gold option, when Wellcome, (now as part of the Charities Open Access Fund (COAF), pay an APC the journal must:

(a) deposit, on behalf of the author, the final version of the article - which includes all the changes that arise from the peer-review, copy-editing and proofing processes - in PubMed Central (PMC), where it must be made freely available at the time of publication (a link to the article on the publisher site is not sufficient); and

(b) license the content under a Creative Commons Attribution-only (CC-BY) licence. Content deposited in PMC is automatically mirrored to the Europe PMC repository.

If the article isn't deposited by the publisher, it is not compliant, and Wellcome won't pay. Can you tell me please if authors are asked who their funder is at acceptance to ensure the RCUK/Wellcome applicable licences are applied? Authors often don't understand what the difference is between CC-BY, and CC-BY-NC licences, and it is much easier all around for administrators (and in terms of retrospectively amending things, publishers too) for RCUK/Wellcome/COAF authors to automatically be pointed towards CC-BY by the publisher.

3. Retrospective APCs.

Wellcome are willing to pay for [the] article, but they need to know if you are able to make this article retrospectively OA, and have the HTML and PDF metadata amended to both reflect that CC-BY and OA status of the article. Can you let me know what [publisher name] can do in this instance?

Again, apologies for the length of the mail. I understand a representative from [publisher omitted] will be attending our Open Access Steering Group Meeting on the 8th of April - I would be happy to discuss this in person if it helps.

With regards your initial question, we would be delighted with the discount. I'll look at how it is reflected in other discount/affiliation schemes we have here, and come up with the best strategy. Most discount schemes we have work by recognising IP addresses/email affiliations, but I will look into it further.

Regards

Kirsty

Appendix IV. Breakdown of spend by article type and Faculty

JISC 2014	Arts	Engineering	Medical and Veterinary Sciences	Medicine and Dentistry	Science	Social Sciences and Law
No. of articles	5	34	20	68	88	5
Total by Faculty	£8,376.48	£53,776.56	£32,764.33	£121,271.09	£150,873.52	£8,013.02
Hybrid Spend	£8,376.48	£42,301.90	£28,798.47	£94,609.31	£129,115.58	£8,013.02
No. of hybrid articles	5	25	16	49	69	5
Hybrid % of Spend	100%	80%	88%	78%	86%	100%
Fully OA Spend	N/A	£10,476.66	£3,965.86	£26,661.78	£21,757.94	N/A
No. of OA Articles	N/A	9	4	19	19	N/A
Fully OA % of spend	N/A	19.85%	12.10%	21.99%	14.42%	N/A
Faculty % of spend	2.24%	14.11%	8.76%	32.42%	40.33%	2.14%
Average cost per article	£1,675.30	£1,552.25	£1,638.22	£1,783.40	£1,714.47	£1,602.60

Appendix V. Faculty/Publisher/Journal/Journal Type/Cost table for RCUK 2014.

Faculty/Department/Publisher/Journal	Full OA journal	Hybrid journal	Grand Total
Arts		£8,376.48	£8,376.48
Arts (Archaeology and Anthropology)		£4,860.00	£4,860.00
Royal Society Publishing		£1,260.00	£1,260.00
Journal of the Royal Society Interface		£1,260.00	£1,260.00
Wiley		£3,600.00	£3,600.00
American Anthropologist		£1,800.00	£1,800.00
Evolutionary Anthropology		£1,800.00	£1,800.00
Arts (Music)		£1,716.48	£1,716.48
Taylor & Francis		£1,716.48	£1,716.48
Contemporary Music Review		£1,716.48	£1,716.48
Modern Languages (Russian)		£1,800.00	£1,800.00
Wiley		£1,800.00	£1,800.00
Russian Review		£1,800.00	£1,800.00
Engineering	£10,474.66	£42,301.90	£52,776.56
Advanced Composites Centre for Innovation and Science (ACCIS)		£4,240.84	£4,240.84
Elsevier		£4,240.84	£4,240.84
Composites Part A: Applied Science & Manufacturing		£2,120.42	£2,120.42
Composites Science and Technology		£2,120.42	£2,120.42
Aerospace Engineering		£11,072.96	£11,072.96
Elsevier		£11,072.96	£11,072.96
Composite Structures		£5,033.24	£5,033.24
Composites Part A: Applied Science and Manufacturing		£2,404.90	£2,404.90
Journal of the Mechanics and Physics of Solids		£2,372.42	£2,372.42
Transportation Research D: Transport and Environment		£1,262.40	£1,262.40
Civil Engineering	£510.00		£510.00
BioMed	£510.00		£510.00
Earth, Planets and Space	£510.00		£510.00
Computer Science	£6,147.72	£6,196.52	£12,344.24
BioMed	£1,728.90		£1,728.90
Genome Biology	£1,728.90		£1,728.90
Elsevier		£1,373.90	£1,373.90
Biochemical and Biophysical Research Communications		£1,373.90	£1,373.90
IEEE	£1,041.67		£1,041.67
IEEE Transactions on Intelligent Transportation Systems	£1,041.67		£1,041.67
OMICS Publishing Group	£891.95		£891.95
Journal of Computer Science and Systems Biology	£891.95		£891.95
Oxford University Press	£852.00		£852.00
Nucleic Acids Research	£852.00		£852.00
PLOS	£1,633.20		£1,633.20
PLOS Computational Biology	£1,633.20		£1,633.20
Sage		£240.00	£240.00
International Journal of High Performance Computing Applications		£240.00	£240.00

Taylor & Francis		£1,716.48	£1,716.48
Digital Journalism		£1,716.48	£1,716.48
Wiley		£1,800.00	£1,800.00
Environmental Microbiology		£1,800.00	£1,800.00
World Scientific Publishing		£1,066.14	£1,066.14
International Journal of Quantum Information		£1,066.14	£1,066.14
Engineering Mathematics	£3,816.94	£6,191.12	£10,008.06
Elsevier		£1,631.95	£1,631.95
Physica D: Nonlinear Phenomena		£1,631.95	£1,631.95
Frontiers Media	£917.48		£917.48
Frontiers in Systems Neurosciece	£917.48		£917.48
Institute of Physics	£1,440.00		£1,440.00
New Journal of Physics	£1,440.00		£1,440.00
MDPI	£1,459.46		£1,459.46
Sensors	£1,459.46		£1,459.46
Royal Society Publishing		£2,700.00	£2,700.00
Biology Letters		£1,440.00	£1,440.00
Proceedings of the Royal Society B		£1,260.00	£1,260.00
Springer		£1,859.17	£1,859.17
Journal of Mathematical Biology		£1,859.17	£1,859.17
Mechanical Engineering		£14,600.46	£14,600.46
American Institute of Physics		£4,731.00	£4,731.00
Applied Physics Letters		£4,731.00	£4,731.00
Elsevier		£6,629.46	£6,629.46
Engineering Structures		£1,754.40	£1,754.40
NDT & E International		£3,211.86	£3,211.86
Ultrasonics		£1,663.20	£1,663.20
Royal Society Publishing		£1,440.00	£1,440.00
Proceedings of the Royal Society A		£1,440.00	£1,440.00
Wiley		£1,800.00	£1,800.00
Earthquake Engineering and Structural Dynamics		£1,800.00	£1,800.00
Medical and Veterinary Sciences	£3,965.86	£28,798.47	£32,764.33
Biochemistry	£1,044.00	£20,150.55	£21,194.55
American Chemical Society		£2,199.77	£2,199.77
Journal of Chemical Information and Modeling		£2,199.77	£2,199.77
ASBMB		£2,543.82	£2,543.82
Journal of Biological Chemistry		£2,543.82	£2,543.82
Company of Biologists	£1,044.00	£3,000.00	£4,044.00
Biology Open	£1,044.00		£1,044.00
Journal of Cell Science		£3,000.00	£3,000.00
Elsevier		£2,463.55	£2,463.55
Biosensors and Bioelectronics		£2,463.55	£2,463.55
PLOS		£999.99	£999.99
PLOS One		£999.99	£999.99
Portland Press		£1,800.00	£1,800.00
The Biochemical Journal		£1,800.00	£1,800.00
Springer		£2,193.42	£2,193.42
Protoplasma		£2,193.42	£2,193.42
Wiley		£4,950.00	£4,950.00
Angewandte Chemie International Edition		£2,700.00	£2,700.00
EMBO Reports		£2,250.00	£2,250.00
Cellular and Molecular Medicine	£970.06	£2,851.20	£3,821.26
PLOS	£970.06		£970.06
PLOS One	£970.06		£970.06
Wiley		£2,851.20	£2,851.20

Cancer Immunology, Immunotherapy		£1,051.20	£1,051.20
Molecular Microbiology		£1,800.00	£1,800.00
Veterinary Sciences	£1,951.80	£5,796.72	£7,748.52
American Society for Microbiology		£1,481.37	£1,481.37
Clinical and Vaccine Immunology		£1,481.37	£1,481.37
Elsevier		£3,055.35	£3,055.35
Behavioural Brain Research		£1,413.32	£1,413.32
Infection, Genetics and Evolution		£1,642.03	£1,642.03
PLOS	£1,951.80		£1,951.80
PLOS One	£1,951.80		£1,951.80
Royal Society Publishing		£1,260.00	£1,260.00
Biology Letters		£1,260.00	£1,260.00
Medicine and Dentistry	£26,661.78	£94,609.31	£121,271.09
Clinical Sciences	£6,227.31	£21,644.92	£27,872.23
American Association of Immunologists		£1,850.64	£1,850.64
Journal of Immunology		£1,850.64	£1,850.64
American Chemical Society		£3,057.32	£3,057.32
Journal of Medicinal Chemistry		£3,057.32	£3,057.32
ASBMB		£1,114.12	£1,114.12
Journal of Biological Chemistry		£1,114.12	£1,114.12
Endocrine Society		£2,222.20	£2,222.20
Endocrinology		£2,222.20	£2,222.20
Frontiers Media	£957.13		£957.13
Frontiers in Psychiatry	£957.13		£957.13
Nature Publishing Group	£2,520.00		£2,520.00
Cell Death and Disease	£2,520.00		£2,520.00
Oxford University Press		£2,400.00	£2,400.00
Brain		£2,400.00	£2,400.00
PLOS	£950.18		£950.18
PLOS One	£950.18		£950.18
Society for Neuroscience		£5,499.84	£5,499.84
Journal of Neurochemistry		£2,433.98	£2,433.98
Journal of Neuroscience		£3,065.86	£3,065.86
Springer		£1,900.80	£1,900.80
Acta Neuropathologica		£1,900.80	£1,900.80
Wiley	£1,800.00	£3,600.00	£5,400.00
Brain Pathology		£1,800.00	£1,800.00
Clinical Endocrinology		£1,800.00	£1,800.00
Journal of Neuroendocrinology	£1,800.00		£1,800.00
Oral and Dental Sciences	£2,703.00		£2,703.00
BioMed	£2,703.00		£2,703.00
Arthritis Research & Therapy	£1,351.50		£1,351.50
Journal of Translational Medicine	£1,351.50		£1,351.50
Physiology and Pharmacology	£2,979.49	£26,138.79	£29,118.28
BioMed	£1,218.90		£1,218.90
Molecular Brain	£1,218.90		£1,218.90
Elsevier		£9,758.79	£9,758.79
Behavioural Brain Research		£1,413.60	£1,413.60
Cell Calcium		£1,796.78	£1,796.78
Neoroscience		£1,602.94	£1,602.94
Neuropharmacology		£4,945.47	£4,945.47
Nature Publishing Group		£3,780.00	£3,780.00
Nature Communications		£3,780.00	£3,780.00
PLOS	£891.79		£891.79
PLOS One	£891.79		£891.79

Wiley	£868.80	£12,600.00	£13,468.80
British Journal of Pharmacology		£1,800.00	£1,800.00
European Journal of Neuroscience		£3,600.00	£3,600.00
European Journal of Pain		£1,800.00	£1,800.00
Journal of Physiology		£3,600.00	£3,600.00
Physiological Reports	£868.80		£868.80
The Journal of Physiology		£1,800.00	£1,800.00
Social and Community Medicine	£14,751.98	£46,825.60	£61,577.58
BioMed	£2,585.70		£2,585.70
Human Genomics	£1,392.30		£1,392.30
Trials	£1,193.40		£1,193.40
BMJ Publishing Group	£4,437.00	£1,989.00	£6,426.00
BMJ	£3,060.00		£3,060.00
BMJ Open	£1,377.00		£1,377.00
BMJ Support & Palliative Care		£1,989.00	£1,989.00
Cambridge University Press		£1,794.00	£1,794.00
Psychological Medicine		£1,794.00	£1,794.00
Elsevier		£15,719.61	£15,719.61
Journal of Affective Disorders		£3,402.71	£3,402.71
Journal of Allergy and Clinical Immunology		£2,196.00	£2,196.00
Psychoneuroendocrinology		£1,821.38	£1,821.38
Reproductive Toxicology		£2,238.77	£2,238.77
Science of the Total Environment		£1,865.81	£1,865.81
Social Science and Medicine		£1,926.94	£1,926.94
Value in Health		£2,268.00	£2,268.00
Hindawi Publishing Corporation	£1,111.12		£1,111.12
Disease Markers	£1,111.12		£1,111.12
Karger		£2,352.94	£2,352.94
Annals of Nutrition and Metabolism		£2,352.94	£2,352.94
Nature Publishing Group		£2,640.00	£2,640.00
European Journal of Human Genetics		£2,640.00	£2,640.00
Oxford University Press		£5,175.60	£5,175.60
American Journal of Epidemiology		£2,550.00	£2,550.00
Clinical Infectious Diseases		£2,625.60	£2,625.60
PLOS	£6,618.16		£6,618.16
PLOS Computational Biology	£1,633.20		£1,633.20
PLOS Medicine	£2,059.18		£2,059.18
PLOS One	£2,925.78		£2,925.78
Sage		£720.00	£720.00
Statistical Methods in Medical Research		£720.00	£720.00
Springer		£5,634.45	£5,634.45
AGE		£1,900.80	£1,900.80
Diabetologia		£1,859.17	£1,859.17
Journal of Abnormal Child Psychology		£1,874.48	£1,874.48
Wiley		£10,800.00	£10,800.00
American Journal of Human Biology		£1,800.00	£1,800.00
BJOG: An International Journal of Obstetrics and Gynaecology		£1,800.00	£1,800.00
Human Mutation		£1,800.00	£1,800.00
Journal of Human Nutrition and Dietetics		£1,800.00	£1,800.00
Obesity : A Research Journal		£1,800.00	£1,800.00
Statistics in Medicine		£1,800.00	£1,800.00
Science	£21,757.94	£129,115.58	£150,873.52
Biological Sciences	£4,875.73	£12,438.36	£17,314.09
BioMed	£1,315.80		£1,315.80

BMC Evolutionary Biology	£1,315.80		£1,315.80
Cell Press/Elsevier		£7,035.96	£7,035.96
Current Biology		£7,035.96	£7,035.96
Oxford University Press	£1,350.00	£870.00	£2,220.00
Genome biology and evolution	£1,350.00		£1,350.00
Molecular Biology and Evolution		£870.00	£870.00
PeerJ	£306.50		£306.50
PeerJ	£306.50		£306.50
PLOS	£971.03		£971.03
PLOS One	£971.03		£971.03
Wiley	£932.40	£4,532.40	£5,464.80
Ecology and Evolution	£932.40	£932.40	£1,864.80
Ecology Letters		£1,800.00	£1,800.00
Global Change Biology		£1,800.00	£1,800.00
Centre for Nanoscience and Quantum Information	£2,989.80		£2,989.80
BioMed	£1,315.80		£1,315.80
Journal of Nanobiotechnology	£1,315.80		£1,315.80
Dove Medical Press	£1,674.00		£1,674.00
International Journal of Nanomedicine	£1,674.00		£1,674.00
Chemistry		£34,351.64	£34,351.64
American Chemical Society		£1,403.51	£1,403.51
Journal of the American Chemical Society		£1,403.51	£1,403.51
Elsevier		£3,938.13	£3,938.13
International Journal of Pharmaceutics		£2,268.00	£2,268.00
Journal of Colloid and Interface Science		£1,670.13	£1,670.13
Nature Publishing Group		£3,780.00	£3,780.00
Nature Communications		£3,780.00	£3,780.00
Oxford University Press		£2,100.00	£2,100.00
Bioinformatics		£2,100.00	£2,100.00
Royal Society of Chemistry		£12,180.00	£12,180.00
Chemical Communications		£3,480.00	£3,480.00
Chemical Science		£1,740.00	£1,740.00
Dalton Transactions		£3,480.00	£3,480.00
Organic & Biomolecular Chemistry		£1,740.00	£1,740.00
Physical Chemistry Chemical Physics		£1,740.00	£1,740.00
Royal Society Publishing		£2,400.00	£2,400.00
Proceedings of the Royal Society B		£2,400.00	£2,400.00
Wiley		£8,550.00	£8,550.00
Advanced Healthcare Materials		£1,800.00	£1,800.00
Angewandte Chemie		£2,700.00	£2,700.00
Angewandte Chemie International Edition		£2,700.00	£2,700.00
Geophysical Research Letters		£1,350.00	£1,350.00
Earth Sciences	£2,755.80	£28,920.30	£31,676.10
BioMed	£1,315.80		£1,315.80
BMC Evolutionary Biology	£1,315.80		£1,315.80
Cell Press/Elsevier		£2,187.68	£2,187.68
Trends in Ecology and Evolution		£2,187.68	£2,187.68
Elsevier		£11,994.22	£11,994.22
International Journal of Greenhouse Gas Control		£2,316.00	£2,316.00
Journal of Hydrology: Regional Studies		£115.21	£115.21
Journal of Volcanology and Geothermal Research		£1,796.78	£1,796.78
Marine and Petroleum Geology		£1,890.00	£1,890.00
Marine Geology		£2,120.42	£2,120.42
Marine Micropaleontology		£1,890.00	£1,890.00

Palaeogeography, Palaeoclimatology, Palaeoecology		£1,865.81	£1,865.81
Geological Society of London		£1,800.00	£1,800.00
Journal of the Geological Society		£1,800.00	£1,800.00
Institute of Physics	£1,440.00		£1,440.00
Environmental Research Letters	£1,440.00		£1,440.00
Royal Society Publishing		£2,556.00	£2,556.00
Proceedings of the Royal Society B		£2,556.00	£2,556.00
Wiley		£10,382.40	£10,382.40
Ecology and Evolution		£932.40	£932.40
Evolution		£1,800.00	£1,800.00
Evolution and Development		£3,600.00	£3,600.00
Geophysical Prospecting		£1,800.00	£1,800.00
Journal of Geophysical Research: Atmospheres		£2,250.00	£2,250.00
Experimental Psychology	£919.54	£14,153.84	£15,073.38
Cell Press/Elsevier		£2,201.55	£2,201.55
Trends in Cognitive Sciences		£2,201.55	£2,201.55
Elsevier		£6,635.81	£6,635.81
Drug and Alcohol Dependence		£3,755.81	£3,755.81
Economics and Human Biology		£1,335.60	£1,335.60
NeuroImage		£1,544.40	£1,544.40
Frontiers Media	£919.54		£919.54
Frontiers in Psychology	£919.54		£919.54
Taylor & Francis		£1,716.48	£1,716.48
The Quarterly Journal of Experimental Psychology		£1,716.48	£1,716.48
Wiley		£3,600.00	£3,600.00
Addiction		£1,800.00	£1,800.00
Psychophysiology		£1,800.00	£1,800.00
Geographical Sciences	£6,679.16	£20,224.80	£26,903.96
Cambridge University Press		£2,034.00	£2,034.00
Journal of Social Policy		£2,034.00	£2,034.00
Copernicus GmbH	£5,783.78		£5,783.78
Biogeosciences	£997.82		£997.82
Cryosphere	£3,311.39		£3,311.39
Hydrology and Earth System Sciences	£1,474.57		£1,474.57
Elsevier		£1,890.00	£1,890.00
Journal of Hydrology		£1,890.00	£1,890.00
Frontiers Media	£895.38		£895.38
Frontiers in Microbiology	£895.38		£895.38
International Glaciological Society		£5,520.00	£5,520.00
Annals of Glaciology		£2,760.00	£2,760.00
Journal of Glaciology		£2,760.00	£2,760.00
Nature Publishing Group		£3,780.00	£3,780.00
Nature Communications		£3,780.00	£3,780.00
Royal Society Publishing		£1,260.00	£1,260.00
Proceedings of the Royal Society B		£1,260.00	£1,260.00
Sage		£240.00	£240.00
Journal of Sociology		£240.00	£240.00
Springer		£1,900.80	£1,900.80
Polar Biology		£1,900.80	£1,900.80
Wiley		£3,600.00	£3,600.00
Environmetrics		£1,800.00	£1,800.00
Social Policy & Administration		£1,800.00	£1,800.00
Mathematics	£1,800.00	£8,572.03	£10,372.03

Elsevier		£1,311.67	£1,311.67
Journal of Economic Theory		£1,311.67	£1,311.67
Royal Society Publishing		£1,296.00	£1,296.00
Interface		£1,296.00	£1,296.00
Springer		£5,964.36	£5,964.36
Bulletin of Volcanology		£1,900.80	£1,900.80
Statistics in Biosciences		£2,162.76	£2,162.76
Theoretical Chemistry Accounts		£1,900.80	£1,900.80
Wiley	£1,800.00		£1,800.00
STAT	£1,800.00		£1,800.00
Physics	£1,737.91	£10,454.61	£12,192.52
American Physical Society		£1,214.28	£1,214.28
Physical Review B		£1,214.28	£1,214.28
Elsevier		£3,420.33	£3,420.33
Icarus		£1,605.93	£1,605.93
Microelectronics Reliability		£1,814.40	£1,814.40
Hindawi Publishing Corporation	£879.91		£879.91
Journal of Nanomaterials	£879.91		£879.91
Institute of Physics	£858.00	£2,040.00	£2,898.00
Nanotechnology		£2,040.00	£2,040.00
New Journal of Physics	£858.00		£858.00
Nature Publishing Group		£3,780.00	£3,780.00
Nature Communications		£3,780.00	£3,780.00
Social Sciences and Law		£8,013.02	£8,013.02
Economics, Finance and Management		£2,313.02	£2,313.02
Elsevier		£2,313.02	£2,313.02
Journal of International Economics		£1,156.51	£1,156.51
Labour Economics		£1,156.51	£1,156.51
Policy Studies		£3,600.00	£3,600.00
Wiley		£3,600.00	£3,600.00
Social Policy & Administration		£1,800.00	£1,800.00
Transactions of the Institute of British Geographers		£1,800.00	£1,800.00
University of Bristol Law School		£2,100.00	£2,100.00
Oxford University Press		£2,100.00	£2,100.00
Journal of Environmental Law		£2,100.00	£2,100.00
Grand Total	**£62,860.24**	**£311,214.76**	**£374,075.00**